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THERE seems to be a probability at last that the old and trite saying of "carrying coals to Newcastle" is about to be invested with a considerable amount of truth. There is a scheme now on foot, and, strange to say, backed up by a syndicate of English capitalists, to so improve the canal facilities between the interior of Belgium and the Scheldt as to greatly facilitate the shipment of the smokeless Belgian coal to London. The proposed plan includes the erection at Brussels of enormous coaling docks and wharves, with every facility for cheap handling. The cheapness of this coal and of pit labor in Belgium renders this scheme not only feasible, but highly remunerative. The demand for the coal, which has already been introduced in considerable quantities, is greatly on the increase, and will be practically unlimited. The advantage to the atmosphere of the city of London by the use of this fuel will be enormous, and before long it may really become possible for the average "cockney" to know what sunshine actually is. Meanwhile, what between his own labor troubles and the Belgian competition, the life of the British colliery owner is truly not a happy one.

WE have just received from the Mines Department of the government of New Zealand, the Report of Prof. J. G. BLACK, M.A., D.Sc., on the "Gold-Fields Classes and Schools of Mines" for the year ended April 30th, 1886; and also the Report for 1886 of the inspecting engineer, Mr. H. A. GORDON, F.G.S., on the "Gold-Fields, Roads, Water-Races, and other Works" carried out either wholly or in part at the expense of the Mines Department. By the former of those reports, it appears that the New Zealand government, with the view of fostering the mining development of the colony and diffusing a general knowledge of the science of mining, has established a sort of peripatetic mining school, which, with its corps of professors, holds classes and delivers lectures for a certain number of weeks each year in the different mining centers of the island. The aim seems to be to impart at least an elementary knowledge of assaying, mineralogy, geology, and mining free of cost to the workingmen of these districts. The necessity for the better technical education of the mining classes will certainly not be disputed by any one; but we are inclined to think that classes given for a few weeks once a year, during which such a diversity of branches is lectured on, are apt to do more harm than good. In our experience, nothing tends more to unfit a miner for his regular work than the acquisition of a smattering of scientific acquirement without having first been thoroughly grounded in the rudiments.

If, instead of these diverse classes, the government were to establish regular primary mining schools in each district for the *practical* instruction of the miners, somewhat after the style of the one established in one of our colliery centers by Mr. ECKLEY B. COXE, and supplement these with one central mining college where the higher branches were taught, the results would, we imagine, be far greater and more enduring. The report, which is really a journal of the movements of the corps of professors, closes with some very good and sound suggestions to the Minister of Mines, which we quote: "It would be useful to have among ourselves, connected with the Mines Department, and available for giving practical directions in the erection of works and plant, some one who has a practical knowledge of the processes used in the United States, who has seen them at work, and who has acquainted himself with the machinery and appliances; who has, in short, mastered the processes in all their details where they are in full operation. I do not know of any better way of meeting this great want than by sending a qualified person to the Pacific slope for a period of several months, to collect and bring to New Zealand the information that is so urgently required on the Coromandel peninsula, as well as at Collingwood and other parts of the colony." We could suggest a better way than the above, which would be, to engage the services of a competent American engineer, who, instead of the experience of a few months, would bring the experience of years to bear on the question.

Mr. GORDON'S report gives a summary of the work done by the government during the past year in building roads and tramways to facilitate access to the mining camps; also the progress and condition of the different water-races, sluices, and tunnels constructed and operated either in part or wholly by government subsidies. The liberal manner in which the government of this far-off colony comes to the aid of the prospector and miner is certainly worthy of the highest commendation, and might well be copied by other governments. One remarkable feature of the whole system is, that most of the undertakings are not wholly unremunerative. Not only do they induce the working of the gold ores in districts that otherwise would have been abandoned, thus enriching the treasury by the duty on the gold produced, but, in addition, the water and channel rents and tunnel tolls yield a very fair interest on the money invested. This is a high commendation of the honesty and economy of the Department of Mines and its officials.

THE NEW COMMISSIONER OF PUBLIC WORKS.

The Mayor and the Governor have undoubtedly won the public approval by their recent summary removal of Mr. SQUIRE, the Commissioner of Public Works of this city. Even his own story, as told in his defense, showed him to have been unfit for such a position.

The appointment of Brig.-Gen. JOHN NEWTON, Chief of the U. S. Engineer Corps, will be received with equally universal applause. General NEWTON'S record as a soldier is a brilliant one; and, what is more to the purpose, his career as an engineer gives guaranty, not only of his ability to direct extensive engineering operations, but also of his special familiarity with the execution of such work in this locality. Perhaps no other man could bring to this important position a greater acquaintance with all its requirements. Moreover, the strict system of the Engineer Department in the disbursement of public moneys is an excellent school, in which General NEWTON has been trained for many years;

and we may expect from him in this particular a reform less spasmodic and more thorough and permanent than the mere change of officials usually involves. We hope, in short, that he will do for New York City what LUDLOW, of the same corps, did for Philadelphia in the Water Department; and we trust that the politicians will not so soon succeed in ousting him as they did LUDLOW.

In truth, General NEWTON will perhaps make a better Commissioner of Public Works than Chief of Engineers. In the latter position, his brief administration has caused considerable dissatisfaction in the corps, by reason of the sudden and miscellaneous manner in which he has ordered its officers from one station to another. This was the more surprising, since it violated not only the traditions of the corps, but the supposed views of the chief himself, whose own professional reputation was largely due to the fact that, having an important work in charge, and having demonstrated his complete capacity to conduct it, he was left undisturbed for years, until it was substantially finished.

The rotation of service by which an engineer officer acquires variety and range of experience is an excellent feature in the system of the department; but its proper application would seem to be confined to young officers. After twenty, thirty, or forty years of service, an officer ought to be allowed, both for the sake of his own honorable ambition and for the good of the country, to carry through some important engineering work for which he has demonstrated his fitness.

Concerning the reasons for this action of the late Chief of Engineers, we have never heard a plausible hypothesis.

It does not seem likely, though it is not impossible, that he was affected by the vague feeling, which new administrations sometimes exhibit, that abuses must be discovered and corrected; and that, when nothing special can be discovered, every thing had better be corrected, any how. This was the discipline of the old woman in the shoe, who let nobody rest until she had "spanked them *all* soundly." It is the besetting weakness of new brooms that they want to sweep.

But the whole episode is now matter of history merely—only we hope history will not, in this instance, repeat itself. Meanwhile, the essential point is that, in his new station, General NEWTON will be called upon to exhibit all his good qualities—his executive ability, his scientific knowledge, his industry and integrity—and will not have a continent in which to yank his subordinates around. Rotation about town, or up and down the aqueduct, will do no serious harm; and, at the very worst, this can not be as restless and wanton a *régime* as that of the politicians which it replaces. Moreover, it will be, as we confidently expect, an administration free from jobs and corruption. And now that the eminent military engineer has became an eminent civilian, we anticipate that he will begin to think better of his late opponents, the civil engineers. *

THE SHOP-COUNCIL.

Under this title, Mr. J. C. BAYLES, of the *Iron Age*, has published a little pamphlet, which may be destined to effect wider results than many more pretentious schemes in the settlement, if not of *the* "labor question" (whatever that may be), yet of sundry questions arising in the management of large establishments. Mr. BAYLES proposes simply a council, representing employers and employed in one concern only, and not authorized to do any thing except consult. Its decisions are to be posted for the information of the workmen, but are not to be binding to prevent either strikes or lock-outs. The only covenant involved in it is, that the council's decision of a question shall be received and considered before any steps are taken on either side which shall cause a suspension of work by strike or lock-out. And even this covenant is made by the workmen explicitly "without prejudice to any of our rights or our duties as members of organizations to which we have pledged allegiance."

It is evident that the most troublesome evils of the present situation are not touched—are, indeed, carefully avoided—by this proposed scheme. It does not in any way prevent all the workmen who are enjoying its beneficent effects, and are secured by it against sudden lock-out, from leaving work instantly, without grievance and without warning, under orders which they do not understand, from secret authorities to which they have "pledged allegiance." It does not prevent the interference of outsiders in the relations between employer and employed. It does not apply to any questions except local ones, such as might cause a local strike. The monstrous claims of the so-called "labor organizations" are tacitly respected by it. It discreetly ignores the boycott and the riot.

We are not surprised to hear, therefore, that Mr. BAYLES'S plan has found favor with the Knights of Labor and with many members of the trades unions. Those who mean well in these bodies see in it, as we do, the chance, at least, of good. Those who mean mischief see no danger of restraint. And all see the prospect, than which nothing is more alluring to Americans, of additional opportunities for discussion and "parliamentary practice."

The agreement upon which the shop-council is founded binds the workmen to so little that it would probably be observed by them. Indeed we think the numerous complaints of the violation of such agreements by workmen almost always appear upon analysis to arise from the action of larger bodies, overruling the wishes and commanding the obedience of the employés of single establishments. We know of one instance, at least, in which, for many years, a simple agreement has existed between the management and the men that no reduction of wages or suspension of work, and, on the other hand, no strike, shall take place without two weeks' notice. This interval has always been found sufficient to permit discussion and adjustment of differences; and since, fortunately, no edict of Knights or unions has countermanded it, the result has been very satisfactory. There has been no standing shop-council; but a conference of representatives, chosen for the special occasion, has practically served the same purpose. There are, however, advantages in a standing council. The representatives on the part of the workmen, being chosen in advance of any controversy, are more likely to be selected with wisdom and without passion, and, serving for a considerable period, will probably acquire a knowledge of the general situation, enabling them to judge more clearly and quickly of the special cases brought before them.

The chief difficulty in carrying out such a plan lies in the business risk involved in the exposure to a "council" of the situation, perils, plans, obligations, profits and losses of the employer. In many cases, such an exposure would be suicidal, and certainly would not be made. Perhaps in most cases, something must be kept back. Experience only can decide whether the partial confidence given by the employer to the shop-council would be satisfactory.

The employer bargains to pay a certain rate of wages, assuming the risk of loss through falling markets, bad debts, or other disasters—a risk which, as statistics show, wrecks the vast majority of so-called "capitalists." His workmen ask for higher wages; he says, "I can not afford to pay them. I would rather stop;" or else, "These are the fair wages of your trade, and therefore the best that it can afford to pay. In proof of which, I can engage other men at this rate, if you do not wish to accept it." Their reply virtually is, "We do not believe you; and, to put the matter to the test, we will abandon our work, running the risk of losing our places, if we are mistaken."

Such is, in its last analysis, a simple local strike on the question of wages. It is a rude arbitrament indeed, injurious to both sides, and necessary only by reason of the lack of faith between them. The cure for this lack of faith is the growth of faith—a slow plant, and not to be cultivated without much patience. Any artificial substitute for it is likely to prove both useless and harmful.

What we like about Mr. BAYLES'S plan is, that it promises so little—nothing more, in fact, than a quiet spot wherein the precious plant of mutual confidence may take root and grow. Every thing of that kind works in the right direction. If it fails, it leaves no legacy of mischief; if it partially succeeds, it is so far, a blessing; if it prevents one strike, it has vindicated its right to be.

Moreover, in a very mild way, and with a pretense of disclaimer, the shop-council is really antagonistic to the outside dictation of secret leagues. It appeals to motives which they despise. It takes the employer out of the category of natural enemies in which they place him. It gives him, through his loyal conduct toward his men, a claim upon their loyalty in return. They are less likely to be willing to sacrifice him for the purpose of punishing somebody else, or of vindicating the dignity of walking delegates and master-workmen. True, they may still hold to their outside "allegiance;" but some day they will rebel—or else, as we would prefer to believe, the outside body itself, under the ameliorating influence of its own members, may cease to be secret and cruel and wanton, and become a manly association for worthy objects of industrious and intelligent citizens. *

CORRESPONDENCE.

[We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
All letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.

Free Coinage of Silver.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: Your article of August 14th on the "Silver Question" suggests the inquiry whether the establishment of free coinage of silver in this country would not arrest the ebbing tide of silver value; and whether it is not in the power of this country alone to stay the tide, without awaiting the slow process of a universal international agreement.

It seems evident that free coinage would place the coin in immediate circulation, instead of accumulating it in the treasury vaults. It is true that such domestic coin could only be exported at its bullion value; but would it not sensibly affect the value of silver?

The United States produces $50,000,000 of the $115,000,000 of the world's annual silver production. England produces none, and the states of the Latin Union but a small quantity.

If the effect of free coinage would be to keep the $15,000,000 surplus of our annual production at home, the entire world's surplus would be

reduced to $10,000,000, a reduction sufficient, it would seem, to stimulate its value abroad.

And here, let me inquire what, if any, is the connection between the price of wheat and of silver? For several years, both have declined in about an equal ratio. The exportation of wheat from India is stimulated by the ability to pay for it in silver at its normal value in India, while the American surplus has to be paid for on a gold basis. If we cut off $15,000,000 a year of Great Britain's supply of silver, should we not thereby increase the price of wheat as well as of silver? And, as the chief export of the United States is breadstuffs, is not the free coinage of silver equally important to the former and to the miner?

Would you gratify your readers with an article explaining the bearing and effect of free coinage of silver in these and other respects? B.

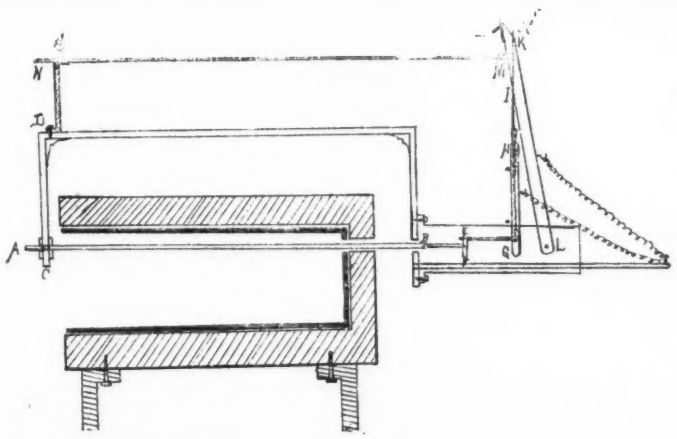
EXPERIMENTS ON A HEAT-REGULATOR AT THE UNITED STATES ASSAY-OFFICE, NEW YORK.

Written for the Engineering and Mining Journal by H. G. Torrey.

Whoever has had much practical experience in cupellation must have noticed that the variation of light, depending upon the clearness or cloudiness of the day, deceives the operator in his judgment as to the degree of heat in the muffle. There is a very perceptible difference even between the light of the morning and of the afternoon during a perfectly clear day, so that, if reliance is placed upon the eye alone, as is now done, there will be misjudgments resulting in very considerable error.

It often happens that errors arising from this cause are so serious as to necessitate repetitions of the assay, which would have been needless could the furnace have been maintained at the proper temperature. Very often, there are annoying delays and embarrassments at the assay-office on this account, which in the old way of working are unavoidable.

With the purpose of obviating this difficulty, one of my assistants, Mr. Charles Taylor, has for a number of months been engaged in experiments on a pyrometer, or, more properly, a heat-regulator, which he has now perfected so that a perfectly uniform temperature may be automatically maintained at any desired degree. By this apparatus, the furnace may be kept at a "copper," "silver," or "gold" heat, or in a few minutes changed from one to the other with perfect precision.



The value of such an appliance to the bullion assayer is manifest, and will at once be appreciated. There may be other applications of it possible, among which I offer as a suggestion its substitution for skilled labor in the tempering of steel; also its employment in the annealing of bank-note plates, where great nicety is required.

This automatic heat-regulator or pyrometer is based upon the expansion and contraction of a single metallic bar, so mounted as to be independent of the expansions of the furnace to which it is attached, thus giving a greater change in length for any given variation of temperature than those composed of two metals whose coefficients of expansion are different, the difference being the measuring coefficient.

For assay furnaces, platinum has been found to be the most suitable metal, on account of its quality of remaining unoxidized upon exposure to high temperatures, in the presence of currents of air, and on account of its infusibility.

A rod *A B*, No. 12 wire gauge, extends along the interior of the muffle close to the roof, being suspended at the fore end by an iron bar *C D*, about half an inch wide, passing freely through it, and extending through the rear end of the muffle and furnace.

The rear end of the rod is connected by a link to the center of a short lever whose fulcrum is at one end. To the other end of the lever, a second link connects with a second lever *G H*, which serves to further magnify the expansion of the platinum rod. This second lever is extended into a pointer *I*, and has a total length of six inches.

The levers are so proportioned that the extremity of the pointer passes through an arc of six inches from a cold furnace to a cupelling heat for gold bullion assays.

The pointer plays between two platinum contacts *K K'*, which are one tenth of an inch apart. These contacts are electrically connected with an apparatus controlling the gas supply of the furnace; and the pointer is also connected electrically with the apparatus in such a manner that, when it rests against the contact nearer the furnace, it causes the formation of a circuit operating machinery that opens the gas-cock. When the pointer, leaving the contact on account of the increased heat, reaches the other contact, the operation is reversed.

The temperature is therefore kept within the limits afforded by the movement of the pointer through one sixteenth of an inch, which represents a variation of temperature of less than 25 degrees Fahrenheit.

The contact points are fastened to a rod *J L*, which is pivoted at its lower end close to the pivot of the pointer. A rod *M N* is also pivoted to its upper end, which passes to the front of the furnace and is clamped by a thumb-screw *S* in any desired position to the frame that supports the whole apparatus.

If it becomes necessary to cool the furnace for silver bullion assays, the operator has only to draw the rod *M N* toward him, thus bringing the contact-bar toward the zero from which the pointer started when the furnace was cold. This movement causes the pointer to bear against the outer contact, shutting off the gas and cooling the furnace to the required point, and no lower.

The pointer is in two sections, pivoted in the center, and is kept in a straight line by a spring *P N*, which allows, without straining the apparatus, the deflections that are made when the position of the contact-bar is changed. Should the platinum bar stretch, or should there be any lost motion in the levers, causing the pointer, when the furnace is cold, to rest at some point other than a fixed zero, the error may be compensated for by two nuts that are placed one on each side of the supporting bar in front. The platinum bar is kept in tension by a spiral spring fastened to the pointer and to a point beyond it.

I am not aware of any similar apparatus; but if such exists, I would be glad to hear of it through the columns of the ENGINEERING AND MINING JOURNAL, in order to compare it with the one here presented, and obtain an instrument that will best accomplish the desired result.

Explosions of Hollow Cast-Iron Pistons.—No less than five have occurred in French workshops in the last twenty years in reheating these pistons—generally for the purpose of removing the piston-rod. Investigation into the interior of a piston in use for eleven years showed the existence of a brown substance containing fatty matter, oxide of iron, peroxide of iron, and carbon. It is thought that a certain quantity of water had been forced into the cavity in service either through the iron or through imperfections in the plugs with which the original core support cavities were filled. This water, in forming oxide of iron, set free its hydrogen, which filled the piston cavity. The recombination of this hydrogen with the oxygen at a low red heat would produce the explosion, and it is recommended that all such pistons be tapped before reheating.

Inclined Railroad for China.—At Hong Kong, a cable tramway is constructed from the town to the Peak, a range of very steep hills, on which are fine villa residences, and where the climate is more salubrious than near the harbor. The incline where they have to work is 4800 feet long, and the line, which is partly single and partly double, is laid with 35-pound steel rails on steel sleepers. The gradients vary between 1 in 2 and 1 in 10, closely following the natural contour of the ground. The total hight to which the carriages have to be raised is 1300 feet, and the ropes, of which one is the working rope and the other the safety rope, run on separate sets of friction-rollers. The carriages are attached to each end of the ropes, and as one pair of carriages ascends the incline, the other pair descends. Each car is to contain 60 passengers, the maximum load being 7½ tons at each end of the ropes. The working rope is passed over a pair of drums 8 feet in diameter, and the safety rope over one drum, the drums being fixed at the top of the incline and driven by two compound steam-engines, 40 nominal horse-power each. The speed of the cars is to be six miles an hour.

Electro-Motive Forces Developed by Cadmium and Iodine.—Mr. A. P. Laurie, in a paper before the Chemical Society on "The Electro-Motive Forces Developed during the Combination of Cadmium and Iodine in Presence of Water," says he has determined, by means of a Thomson electrometer, the electro-motive forces of cells consisting of a cadmium and a platinum plate immersed in a solution of cadmium iodide containing free iodine. In one set of experiments, the amount of cadmium iodide in solution was constant and the amount of iodine was varied; in another, the amount of cadmium iodide varied, the solution being in each case saturated with iodine; in a third, a constant amount of iodine, but varying amounts of cadmium iodide, were used. The result of the experiments is to show that, if cadmium and water containing cadmium iodide and free iodine are brought together, a considerable electro-motive force is developed, which steadily falls. This depends on the facts (1) that as the free iodine is diminished, the electro-motive force falls gradually at first, but more rapidly the less iodine there is present; (2) that as the cadmium iodide solution increases in strength, the electro-motive force falls very rapidly while very small quantities of the salt are present, but more and more slowly as the amount of salt present becomes considerable. In both cases, the change may be represented by a continuous curve. The actual values are given in the paper.

The Electrical Transmission of Power.—M. Marcel Deprez, as our readers are aware, has been engaged in experiments connected with the transmission of force by means of electricity. The Rothschilds some time since provided him with an unlimited credit to prosecute his researches at Creil, under the inspection of a commission of thirty-eight men of science. On July 23d, the commission met to hear a report on the results at present obtained, drawn up at their request by M. Maurice Lévy. The report was unanimously approved. It appears from it that it is possible now, with one generator and one receptor, to transport to a distance of about thirty-five miles a power capable of being used for industrial purposes of 52 horse-power, with a yield of 45 per cent, without exceeding a current of 10 ampères. When the amount of power absorbed by the apparatus used to facilitate the recent experiment, but not required in the applications to industrial purposes, is added, the yield will be nearly 50 per cent. The commission certifies that the machines now work regularly and continuously. The maximum electro-motive force is 6290 volts. Before the construction of the Marcel-Deprez apparatus, the maximum force did not exceed 2000 volts. The report states that this high tension does not give rise to any danger, and that no accident has occurred during the past six months. The commission is of opinion that the transmitting wire may be left uncovered on poles, provided it be placed beyond the reach of the hand. It estimates at nearly £5000 the probable cost of the transmission of 50 horse-power around a circular line of about seventy miles. This cost would, however, be much diminished if the machines were frequently constructed.

THE PYRAMID-HILL OF GIZEH.*

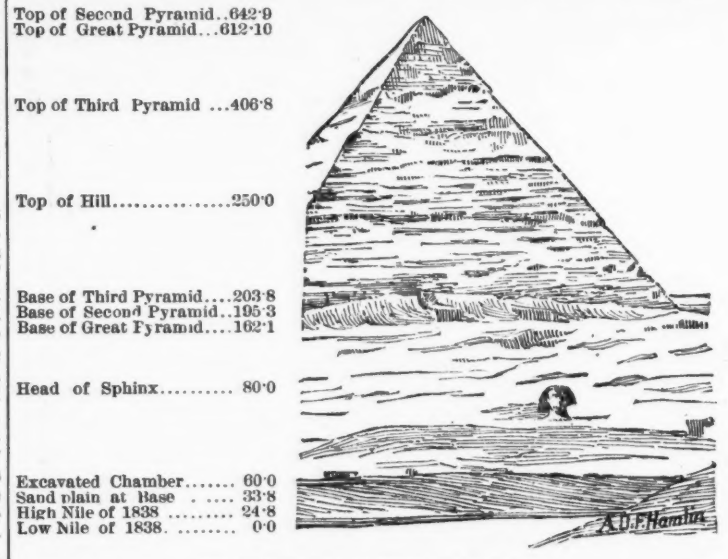
By F. Cope Whitehouse, M.A.

"No one who has had the happiness to set foot on the black soil of Egypt ever turns back on his homeward way before his eyes have looked upon that wonder of antiquity, the threefold mass of the Pyramids on the steep edge of the desert. The desert's boundless sea of yellow sand, whose billows are piled up around the gigantic mass of the Pyramids, deeply entombing the tomb itself, like a corpse long since deceased, surges hot and dry far up the green meadows, with its scattered vegetation, where the grains of sand and corn are intermingled. From the far distance, you see the giant forms of the Pyramids, as if they were regularly crystallized mountains, which the ever-creating nature has called forth from the mother soil of rock to lift themselves up toward the blue vault of heaven. And yet they are but tombs built by the hands of men, which, raised by King Khufu and two other Pharaohs of the same family and dynasty, have been the admiration and astonishment alike of the ancient and modern world as an incomparable work of power. Perfectly adjusted to the cardinal points of the horizon—the south and north, the east and west—they differ in breadth and hight, as is shown by the measurements of Colonel Vyse."

"The construction of these enormous masses was long an almost insoluble enigma for experts in such work; but the younger generation, applying its inquiring spirit to the unknown solution, has succeeded in stripping off the outer shell, so as to find the kernel." A Pharaoh "began his work from his accession. As soon as he mounted the throne, the sovereign gave orders to a nobleman, the master of all the buildings of his land, to plan the work and cut the stone. The kernel of the future edifice was raised on the limestone soil of the desert, in the form of a small pyramid built in steps, of which the well-constructed and finished interior formed the king's eternal dwelling, with his stone sarcophagus lying on the rocky floor. Let us suppose that this first building was finished while the Pharaoh still lived in the bright sunlight. A second covering was added, stone by stone, on the outside of the kernel; a third to this second; and to this even a fourth; and the mass of the giant building grew greater the longer the king enjoyed existence. And then, at last, when it became almost impossible to extend the area farther, a casing of hard stone, polished like glass and fitted accurately into the angles of the steps, covered the vast mass of the king's sepulcher, presenting a gigantic triangle on each of its four faces." "The stones that the master's careful consideration chose for the building of 'the lights' (the Pyramid of Cheops) were laboriously quarried out of the rock in three different places by the grievously oppressed workmen. The material—a spongy limestone without firmness—from which the inner kernel of the building was constructed and which remained afterward hidden from every eye, was found close at hand; for the native rock on which the building was raised yielded it in abundance to an unknown depth. The better sort of stone, chosen for the steps and successive layers, was drawn upon rollers along the causeway (above half a mile long) that extends from the mountain on the right of the river to the plateau of the Pyramid."†

This description has been selected because the eminence of its author makes it, to a certain extent, representative of its class. It needs no personal knowledge of the plateau of Gizeh to detect obvious misstatements of fact and erroneous opinions. In the most recent work on the subject, it is said with melancholy truth that "descriptions of the Pyramids are usually replete with extraordinary mistakes—'granite' for 'limestone,' 'hight' for 'width,' etc. In the Pyramids and Temples of Gizeh, by W. M. Flinders Petrie,‡ three pages (68–70) are devoted to the analysis of this accretion theory, and "its falsity has been fully demonstrated." Instead of the desert's boundless sea of yellow sand,§ the "Pyramids stand both on the same hill, an elevation not far short of a hundred feet in hight."‖ This hill was adorned with magnificent edifices.¶ Its basalt pavement, covering more than a third of an acre, is formed of blocks sawn and fitted together, and laid upon a bed of limestone of fine quality. An edifice, commonly called the Granite Temple, stands near the Sphinx at the foot of the hill of Gizeh; and is directly connected with the Second Pyramid by means of a causeway, about 15 feet wide and a quarter of a mile long (F. P., p. 43).** On both sides of it, the rock is closely perforated with the large shafts of rock tombs bordering on it. It led to a second temple, similar in character, in front of the middle Pyramid. There are also passages that are an exact "model of the Great Pyramid passages, shortened in length, but of full size in width and hight." (F. P., p. 15.)

The doorway of the Pyramid of Cheops is about 55 feet above the pavement.†† This descending passage speedily enters the solid rock, and reaches a depth of nearly a hundred feet below the surface of the hill. The subterranean chambers and passages are all cut roughly in the rock. They are above the level of high Nile. A view of the Pyramid of Gizeh from the south shows that the hill is detached on that side also. It is, as a matter of fact, completely isolated, and was an island surrounded by water during the long period before the Nile eroded its present channel between Abu-Roash and the hills behind Cairo. Of the total hight of 594 feet from high Nile to the present summit of the Pyramid of Cheops, at least 150 feet is solid rock. The rock also arises as a core not less than twenty-five feet within the pyramid, whose lower courses are merely a revetment. It is natural to suppose that only the finer stone was brought from the eastern cliffs, and that the bulk of the masonry was quarried out of the hill itself. The other pyramids are built of material found on the spot. "The Pyramid of Abu-Roash is about five miles to the northwestward of those of Gizeh.* The base (320 feet square) alone remains. The defective places have been made good with masonry, but the bulk of it is formed of the mountain (composed of a hard chalk) that has been reduced to a level around it. It is about 510 feet above the plain." "The material of the Pyramid of Zowyet el-Arrian has been quarried from the adjoining hills." "The Pyramids of Abousir are on an elevation that is about eighty feet higher than the adjacent plain. The greater part of the material consists of stone found on the spot." The bulk of the masonry of the stepped Pyramid of Saccarah "consists of loose rubble-work. The stones have been quarried on the spot." "The northern stone Pyramid of Dashour is built with stone taken from the adjacent mountains." "The body of the Blunt Pyramid is built with stone from the immediate vicinity.'


Top of Second Pyramid..642·9
Top of Great Pyramid...612·10
Top of Third Pyramid ...406·8
Top of Hill.....250·0
Base of Third Pyramid....203·8
Base of Second Pyramid..195·3
Base of Great Pyramid....162·1
Head of Sphinx..... 80·0
Excavated Chamber..... 60·0
Sand plain at Base . .... 33·8
High Nile of 1838 ..... 24·8
Low Nile of 1838. ..... 0·0
A.D.F.Hamlin

THE PYRAMID-HILL OF GIZEH FROM THE EAST.

The Pyramid of Medum is little more than a revetted hill. Lastly, the Pyramids in Lake Mœris, 600 feet above the bed of the lake, were, according to Diodorus, formed from one of the numerous isolated masses in the depression west of the Nile. There is, therefore, strong reason to suppose that in the case of the Pyramids of Gizeh the material was quarried on the spot. But Dr. Brugsch is wrong in limiting its use to an inner kernel, and wrong also in implying that the quarries lay beneath the native rock on which these structures stand. The hill of Gizeh rises to a considerable hight above the bases of the Pyramids. It is inconceivable that rational beings, who could, as we know, transport, polish, and hollow immense blocks of granite, but who did not hesitate to place beautifully fitted masses of limestone near "rude masonry, consisting of rough blocks, put together like rubble work, with Nile earth instead of mortar," in order to economize labor, would have gone below the level of the pyramid for rock that lay above it.

Mr. Petrie, however, has expressed the opinion that "the whole of the stones were quarried in the cliffs of Turra and Masara, 'and brought across to the selected site." He describes the actual mode of work as he conceives it. "At the end of July, when the Nile had fairly risen, a levy of 100,000 men would assemble to the work. Not more than eight men could well work together on an average block of stone of 40 cubic feet, or 2½ tons; and the levies would probably be divided into working parties of about that number. If, then, each of these parties brought over 10 average blocks of stone in their three months' labor—taking a fortnight to bring them down the causeways at the quarries, a day or two of good wind to take them across the stream, six weeks to carry them up the Pyramid causeway, and four weeks to raise them to the required place on the Pyramid—they would easily accomplish their task in the three months of high Nile" (p. 82). But this period "is only mentioned in connection with the removal of the stones and not with the actual quarrying or building: on these labors, probably a large staff of skilled masons was always employed."

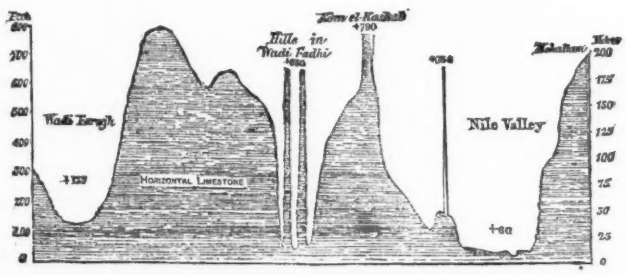
Undoubtedly a pyramid might have been constructed in this way. But it is an important factor in this inquiry, which has escaped the attention of Herodotus and every subsequent observer, that some of the stones on the exterior of the Pyramid of Cheops could not have been quarried in the interior of a hill. They are deeply scored and veined by the action of water. They could not, therefore, have been cut out of homogeneous rock; for, although there is not the slightest evidence that this pyramid was cased, no such disintegration would be effected by the action of the atmosphere in many thousand years. "The Great Pyramid" is supposed to contain "about 2,300,000 stones, averaging 50 by 50 by 28 inches, or 2½ tons" (p. 83). This average is merely the result of calculation. No considerable number of stones has the same approximate weight. The two hundred courses are irregular in thickness. Prof. Piazzi Smyth found it was often difficult to say where any particular course began or ended; especially as the courses—though generally running uniformly along all four sides—were in some particular places composed of two layers of stone, each of which might then be taken inadvertently as a single course; or again, two small courses rather ruined, might appear as one large one. There is, however, abundant proof that the courses are not of uniform or regularly decreasing or increasing thickness" (P. S. ii., 128). The three lower courses of the revetment are exceptionally thick. From the thirtieth to the fortieth course, the stones are 30, 26, 28, 24, 24, 50, 41, 39, 38, 34 inches in hight. The upper thirteen courses range between 20 and 22 inches. The thirty-sixth course, with a maximum thickness of four feet two inches, is nearly a hundred feet above the base The ninety-ninth, one hundredth, and one hundred and nineteenth are 41, 37, and 35 inches, while all higher

* From the *School of Mines Quarterly*, March, 1885.
† Brugsch's History of Egypt, Vol. I. ‡ New and revised edition, 1885.
§ There is very little sand on the high desert. In the valleys, it has drifted into dunes, leaving the horizontal limestone exposed, or covered only to the depth of a few inches.
‖ Herodotus, ii., §127.
¶ See my paper, "The Topography of the Pyramids." London, 1881.
** The abbreviations used are: F. P., Pyramids and Temples of Gizeh by Mr. Flinders Petrie; P. S., Our Inheritance, by Prof Piazzi Smyth; V., Pyramids, by Colonel Vyse Proper names in quotations follow the original spelling.
†† I am indebted to Mr. A. D. F. Hamlin, of the Department of Architecture, for these accurate drawings from photographs.

* Vyse, iii., pp. 8, 10, 15, 43, 63, 66.

stones are between 31 and 20 inches in hight. It is evident from the strata exposed on the sides of the hill that these thicknesses correspond substantially to the irregular deposits of limestone that are so plainly marked in the head of the sphinx. If the stones had been delivered from a quarry situated at a distance, the engineer in charge and master-workmen would have finished them to a scale. The labor of dressing them to a size would not have amounted to one thousandth part of the expense of transporting blocks of uncertain weight and shape to be fitted at an altitude of five hundred feet, with the danger and annoyance in removing the fragments. Yet it is obvious that many of the blocks were fitted *in situ*. In the rock-hewn temples of Nubia, which have a portico of hewn stone, the walls of dressed blocks are carried up against the rough sides of the hill. The rectangular stones are neatly fitted, and there has been no disintegration at the joints or in the face of the blocks. When Richter, therefore, put on canvas, in his celebrated picture of the Building of a Pyramid, his conception of the results of such a method, he was forced to depict a structure that differed essentially from that

Middle Courses of the Pyramid of Cheops.



Section of Fifty Miles on Lat. 30°.

which we are examining. Each gang of slaves delivers its tale of average stones ready for the skilled masons. They receive them on well-laid terraces of regular hight. But a detached mass of rock, like this island of Gizeh, would have been left by the subsiding waters with several knolls, the highest toward the northeast and the lowest to the southwest, where the action of the water had been most strongly felt. Such hills exist by thousands in the desert and on the banks of the Nile. They are formed in the sandstone of Nubia and in the limestone of Egypt, as in the Laurentian rocks of Canada and other horizontal stratifications. Their hight is limited by the plateau out of which they are carved and the depth to which erosion or subsidence has exposed their sides. They may have, as at Abu-Simbel, a slope as steep as a pyramid. They are often far more precipitous than the angle of convenience and stability usually selected for a pile of flat stones. "The southern Pyramid of Light having been built with a soft limestone, has crumbled away until it has the appearance of a round hillock; and in fact, many of the desert hills are much more pyramidal."* The engineers at Gizeh, therefore, did not commence with a flat surface. If the core of rock in the Pyramid of Cheops is squared and leveled, a considerable amount of stone has been removed to bring it into that condition. How high did the natural hill rise before the present constructed summits were begun? The base of Abu-Roash is natural rock 500 feet above the plain. Its chambers in the natural rock are over a hundred feet above the chambers in the Pyramid of Cheops. To the west, the Kom el-Kashab, eight miles distant, is nearly 300 feet higher, while eastward the whole range of the Mokattam is at an equal elevation. In order to determine this, *inter multa alia*, I undertook in March, 1882, an expedition into the desert, west of the Pyramids.*

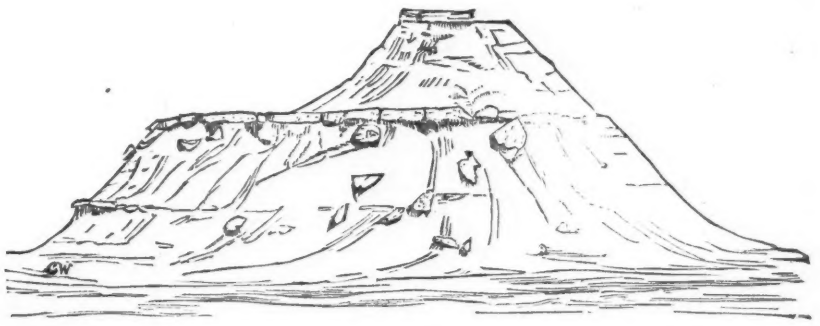
(TO BE CONTINUED.)

* Vyse, iii., p. 78.

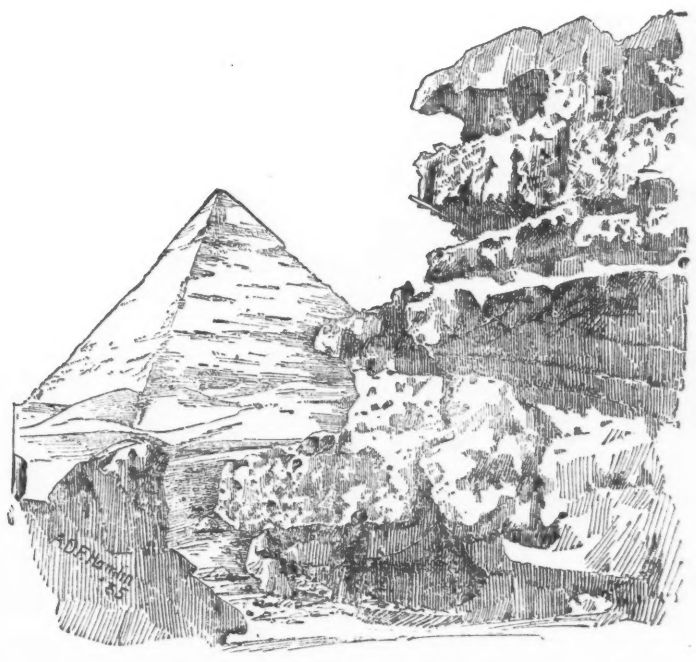
SHEEP MOUNTAIN MINES, GUNNISON COUNTY, COLO.

Written for the Engineering and Mining Journal by Frederick Amelung, M.E.

The road from Crystal to the Sheep Mountain District takes you up the North Fork of Rock Creek to Snow Mass City, now deserted, from which a steep trail up Meadow Mountain leads to the divide between Sheep and Arkansas mountains. To the east, Silver Creek drains into



Pyramidal Hill in the Desert. Long. 30° 55′.



Stratification of the Hill of Gizeh.

the North Fork of Rock Creek; while to the west, the South Fork of Lost Trail Creek runs into the main fork a mile or so above the Lake, a local term for a small sheet of water on Lost Trail, a little above its junction with Rock Creek, and some two or three miles above the coal camp of the White Breast Coal Company. Here coal, iron, and marble occur within a short distance, and belong mostly to the Midland Railroad.

One of the most prominent mines on the mountain is the Black Queen. It has been standing idle for some time past, pending negotiations for its purchase by some Denver parties. It lies on the south slope of Sheep Mountain, is easily accessible from Crystal, which is about a mile and a half distant, and some good mill-runs have been made of the ore; but the high valuation placed on the mine by the owners has hitherto prevented a sale.

On the same slope of the mountain, but farther east and near the

* No one had ever been beyond the visible horizon. Lieut.-General Stone, then chief of staff, exerted to the utmost his rare zeal and tact to secure for me the support, or at least the countenance, of the revolutionary government of Arabi, then Minister of War. Permission was refused, and I was even forbidden to take a European companion. At the Pyramids, however, I found Mr. Petrie engaged in that work which has since been published with so much credit, and, literally at an hour's notice, before sunrise of March 22d, we were on our way into the desert. His engagements compelled me to curtail my plan. The survey is published on his responsibility. His accuracy in such a matter is beyond question. These observations have been borrowed from me by the British War Office, the Dutch Academy of Science, and Dr. Schweinfurth.

crest, at the upper end of Homestake Gulch, is the City of Detroit, a location on the Mammoth vein. The upper tunnel, which is in 90 feet, has a fair showing of ore. This appears to be high-grade mineral, galena with tetrahedrite, pyrite, chalcopyrite, and blende in a quartzose gangue. The vein is from four to six feet wide, dip nearly vertical in tunnel, but about 75 degrees northeast in the open cut on the crest of the divide. The strike, like most of the prominent veins on the mountain, is northwesterly and southeasterly. The country-rock consists of shales, slates, quartzites, etc., belonging to the Cretaceous period, and all dipping northerly about 20 degrees.

A little to the east of the City of Detroit is the Milwaukee mine, owned by Grant and J. G. Hungerford, W. G. Miller, and Charles Snyder. It is now worked on a lease. Some very high-grade ore has been shipped in small lots from this mine. The upper tunnel, 75 feet long, has good ore in the face; the best was found about sixty feet in, a chute of "thousand dollar mineral" being run through. Another tunnel has been run in below this, in order to gain depth, and is now in 180 feet. It has been run through the country-rock, shale, on account of easier working, but the lessees are now cross-cutting the vein. The ore consists of galena, pyrite, chalcopyrite, blende, and, in the chute mentioned, carried tetrahedrite with possibly ruby silver or silver glance. The vein will be exposed next week, when a good showing may be expected.

The Big Wonder claim lies on the same slope toward Crystal, west of the Detroit. The vein is about six feet wide, very distinctly marked, and dips nearly vertically with northwesterly and southeasterly strike. The vein has a quartzitic gangue with decomposed iron, in which occur galena and pyrite. The galena is somewhat pockety, and runs about 60 ounces of silver to the ton. There is little or none in the present face of the tunnel, which is in about 70 feet. This claim is of fair promise and worthy of further development.

Proceeding to the westward along the crest of Sheep Mountain, the Gothic Bell is encountered on the northwest slope. This mine was located apparently on a slide, as the shaft, after passing through sixty feet of vein material, carrying paying quantities of high-grade ore, lost it entirely, quartzite being run into with a slickenside of mud on top. The vein has not been found as yet, although a long line of tunnels, shafts, open cuts, and trenches go to show that it has been pretty thoroughly sought after. The ore or gangue on the dumps, from what I was able to gather, consists of quartzite, very compactly mixed in spots and patches with iron and some high-grade silver ore.

About half a mile farther down this northwestern slope, we run across the Last Chance and Washington claims, two of the most promising prospects on the mountain. Their ore has a close affinity to that of the Gothic Bell and possibly of the Big Wonder. The vein on the Washington is about three feet wide, well defined, with good walls. At the open cut, a horse of quartzite divides the vein into two narrow seams from six inches to a foot in width, carrying the ore. The dip is about 80 degrees northeast. It happens at that point to be a contact vein, the foot-wall being quartzite, siliceous slate the hanging-wall. The slates here lie unconformably on the quartzite, and are bent in the immediate vicinity of the vein. The ore consists chiefly of a close-grained mixture of quartzite and magnetite (with possibly some lievrite) and some little chalcopyrite. The quartzitic gangue is characterized by the presence of radiated bunches of very fine quartz needles occurring in the vuggs and cavities of the vein. A tunnel has been started, now in 25 feet, about a hundred feet down the slope, which it is intended to have follow the vein. The Last Chance vein runs toward the Washington (the older location), and the surveys conflict on the eastern end. They are probably spurs of the same vein. The country-rock at the Last Chance tunnel, which is forty feet long, is quartzite, and the vein is more strongly mineralized than at the open cut on the Washington. The vein apparently splits here, or encircles a horse of quartzite, the development being too slight to determine which. The ore carries at times an appreciable amount of argentiferous tetrahedrite, but is otherwise identical with that of the Washington, the quartzitic gangue being marked by the same peculiar occurrence of magnetite and the presence of vuggs lined with the sharpest of fine quartz needles.

The Climax, August Flower, and Galena lie close together on the South Fork of Lost Trail Creek, the Climax being on the Sheep Mountain slope, the other two on the Arkansas Mountain side. The climax has a six-foot vein with well-defined walls, the dip being nearly vertical. The vein is evenly mineralized, with occasionally a horse of country-rock. The gangue is quartz and chert, with calcite. The ore is a mixture of pyrite, chalcopyrite, blende, and galena, the development consisting of a sixty-foot tunnel with white streaky-quartz gangue in face. The country-rock is a siliceous slate.

The August Flower is up the creek from the Climax, on the south slope of Arkansas Mountain. The country-rock is here a black calcareous shale. The vein is about four feet wide, with the same strike as the Climax, the dip 80 degrees northeast. The gangue is calcareous, with chert and calcareous shale inclosed. Ore occurs in streaks and chutes mostly on the hanging-wall; six inches in the face of the tunnel, chiefly chalcopyrite and galena. The shale dips northerly about twenty degrees. The Galena almost adjoins the August Flower on the east, with a vein similar in character and contents. The dip here is variable, possibly due to local causes. The ore is fair—galena, blende, and chalcopyrite, in a calcitic gangue. From the appearance of the vein, I should judge it to be a spur or split from the August Flower.

Above this group, on Sheep Mountain, and half a mile up the creek, the Silver Link is met with. This is a relocation of the old Julia claim. The surface showing is favorable, some high assays having been had from the croppings. The ore consists of galena with gray copper, pyrite, chalcopyrite, and blende in a quartzitic gangue. The vein is about six feet wide, strike northwest and southeast, dip about 80 degrees northeast. The development consists of a shaft about 40 feet deep with a good shaft-house over it, some open cuts, and a tunnel, now in forty feet, which has been run to drain the shaft, the latter being full of water.

The Mammoth, Cleopatra, and Truckie are three claims on the Mammoth vein, the largest on Sheep Mountain, which belong to a syndicate of Kansas capitalists, which also owns a number of other mines and prospects on Sheep Mountain, including the Monarch, Dalton, Irene, and True Crevice. They are now awaiting the result of a cross-cut that is running from the Mammoth shaft, which is 100 feet deep. Judging from the average dip of the vein, it should be cut within fifty or sixty feet from the shaft. At the open cut above the shaft, and at the cross-cut on the Cleopatra ground, the ore is very promising, consisting of galena, pyrite, chalcopyrite, and some blende in a quartz gangue, frequently inclosing angular fragments of the country-rock. The width of the vein averages from ten to twelve feet, the country-rock varying with the location. The strike is about northwest and southeast, dip from 75 to 90 degrees. It is nearly vertical in the quartzite, but flattens somewhat in the shales and slates. An improvement in the ore may be looked for when the vein is cut, although the depth, 100 feet, is hardly enough to test its quality. The other properties are idle now, pending the cutting of the vein at this point.

Just at present, but little work is doing on the mines on this mountain, most of the miners and prospectors having been engaged in hunting up and locating deposits of coal, iron, and marble on Rock Creek, below the Lake. The White Breast Coal Company has a large force of men at work down there, and two engineering parties are busy locating the roadways up Rock Creek from Satank for their respective companies.

News, which, however, I can not vouch for, has been received here of the bonding of the Sylvanite mine at Gothic, for two hundred and fifty thousand dollars. The mine is locally held to be worth more money. Mismanagement and waste during the past few years seem to have been the cause of its comparative failure to rank as a great producer.

Work has been started up in the Black Queen since I began this letter. It was examined a few days ago for some Denver parties, but I am unable to give the result of their operations.

CRYSTAL, GUNNISON COUNTY, COLO., August 5.

ANOTHER CONCENTRATOR.

Written for the Engineering and Mining Journal by Frederick G. Corning, M.E.

The process of ore-dressing or mechanical concentration, in the United States, is gradually reaching proportions only comparable in economic importance with the scale of operation and perfection of that art in almost all of the great mining regions of European countries.

Until within the past four or five years, the receiving-floors of sampling, milling, and smelting-works in the West have been stored almost exclusively with raw ores, coming directly from the mines, where waste-dumps were accumulated, rich in the lower grades of mineral ill-adapted in the natural state to profitable transportation and metallurgical treatment.

But of late years, the products of concentration make up a formidable proportion, sometimes the bulk, of the smelters' ore supply; and the reduction-works at Leadville, Denver, Pueblo, Durango, Omaha, Salt Lake, Wood River, and other metallurgical centers are now filled with the "concentrates" of ore-dressing mills, testifying to a greatly increased efficiency in the exploitation and turning to profit of ore-deposits. Indeed, the maintenance of many lucrative mining operations in such thriving districts as Leadville, San Juan, and Wood River is solely dependent upon the successful dressing of the lower grades of ore, which fact of itself goes to prove the growing importance of that branch of mining engineering.

But before we shall have completely attained in American mining the thoroughness and technical completeness characteristic of the industry in the old country, a broader appreciation must be had of the benefits to be derived from an extensive application of concentration, carried to a finer degree of economy in point of a more general dressing of sands, coarse pulps, and slimes, which are too often inefficiently treated or allowed to go to waste.

The process of concentration, sometimes ultra-expertly termed "dynamical metallurgy," has been vaguely construed and imperfectly understood in certain mineral regions of the West. This is, perhaps, in large measure, owing to the perplexity growing out of the fact that concentration belongs among the arts in which practical experiences often differ materially from the theoretical results of complicated computations developed under assumed ideal conditions; and on this account it is highly probable that, among the branches that command the attention of the specialists in the profession, there is none requiring so complete an understanding of both the theory and practice, and a familiarity with the business conditions involved in the various problems at issue, as does the concentration of ores. And while the value of the theoretical studies is not intended to be underrated, yet it is evident that if the ore-dressing specialist can not be expert in all three requirements, he may better sacrifice the higher mathematical knowledge of the behavior of different substances in various mediums, under variable conditions, than be deficient in the experience and practical business sense necessary to a successful solution of the problems coming within the province of the art.

Ores are not infrequently met with in which the specific gravities of the valuable and worthless ingredients, although favorable to a fairly good separation, act, on account of other physical peculiarities, so nearly alike, subjected to mechanical treatment, that separation is rendered practically impossible. Hence the necessity for exhaustive experimentation as a preliminary in deciding upon the concentration properties of an ore.

However, not alone a neglect in making such prelimary tests is the cause of many of the failures of concentration schemes; for it has happened that all the laboratory work has been carefully done and the plant properly appointed: but alas! a thorough mining examination was not undertaken, and, after a few days' run, the source of the ore supply has proved inadequate to the capacity of the mill, and the prime requisite to the success of a formidable concentration enterprise is found wanting, namely, *large masses* of suitable low-grade ore exploitable at a cost sufficiently below its net metal value to leave a margin for profit over and above the expense of hauling, dressing, and the unusually heavy losses involved in the mechanical process, besides the *pro rata* cost of transportation and treatment of the concentrates according to the concentration proportion attainable.

The investigation of this fundamental requirement is quite as much a matter for underground inspection and mining judgment as it is a question demanding the subjection of the ore to panning and other decisive tests; and as a general rule, which, truth to tell, is too little adhered to

by enthusiastic Eastern companies, the erection of costly plants should invariably be preceded by satisfactory developments insuring a constant ore supply.

Among the conditions under which Western mines are operated, in mountainous and somewhat inaccessible localities, the expense of transportation is an important item in swelling the cost of production. And in such districts, other things being favorable, the chief advantage of dressing is to be looked for in the saving of freight consequent upon effecting a certain concentration proportion of the valuable metallic constituents. Here it may be mentioned that the disasters of custom ore-dressing works are frequently to be traced to the placing of mills at points, perhaps central as far as accessible situation goes, but at such distances from the mines that yield the bulk of the mineral that the cost of hauling the raw ore to the works is just heavy enough to absorb all the profit of the process and defeat the main object of mechanical treatment. Owing to this mistake and to the unsuitable, scattered occurrence of low-grade mines in one and the same district, custom concentration, generally speaking, has not proved very successful.

The most difficult part of ore-dressing is notably the washing of the sands, coarse pulps, and slimes. The processes followed in the mechanical treatment of these fine products involve at once a disproportionate amount of time, trouble, expense, and loss, besides an intricacy of management, as compared with the concentration stages of coarser-grained material.

The realization of these complexities and of the imperfections attending the treatment of the pulverized products, which suggest the necessity for improvements in the automatic action and capacity of buddles, percussion-tables, and vanning machines with the object of increasing the purity and efficiency of pulp-washing, is evidenced by the many machines and devices toward the patenting and introduction of which inventors are directing their efforts.

The vanning principle, in its various modifications, has apparently predominated, and earned the most important position in the United States among the machines that handle crushed products below a fineness suitable for concentration on jigs.

Although it must be acknowledged, practically if not theoretically, that a complete separation can not be continuously produced in one operation (for, in attempting to make pure "*heading concentrates*," free from the worthless gangue material, "*tailings*," there will always be a transitional zone of intermediate richness, "*middlings*;" and in general any attempt to eliminate the latter product will result in either making *lean headings* or *rich tailings*), still the most popular of the modern dressing-tables have in view the effecting of a perfect, continuous separation, that is, to do clean work with a minimum loss; and in the construction and operation of such vanners, little or no account has heretofore been taken or provision made for the middling grades of material.

The concentrator that is the subject of this article, recently patented by the writer, not only separates the heavy and valuable metalliferous particles contained in ore-pulp and mill tailings from the gangue or waste material, which is the light and worthless portion, but the concentration is carried to a finer grade of perfection in that the machine also effects a separation of the several kinds of valuable ore particles into

Fig. 1.

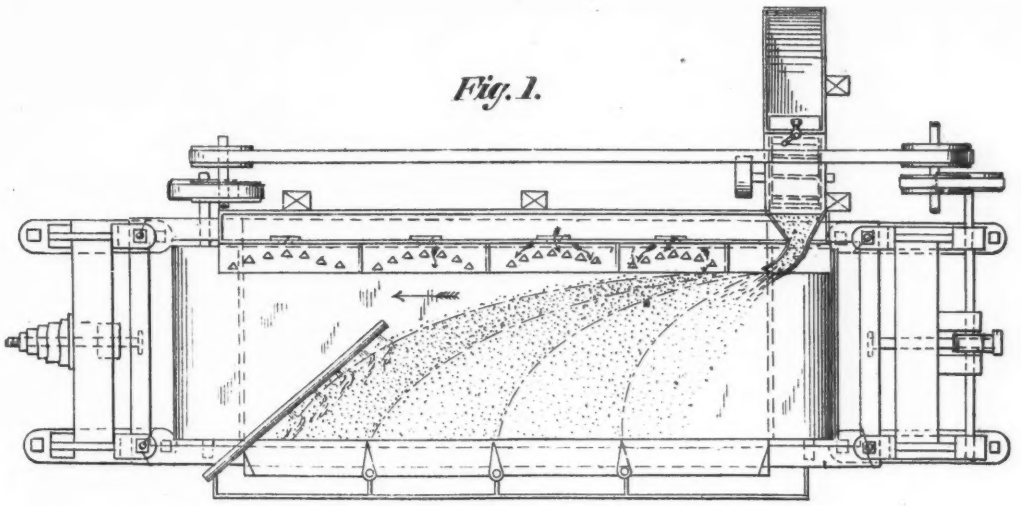


Fig. 3.

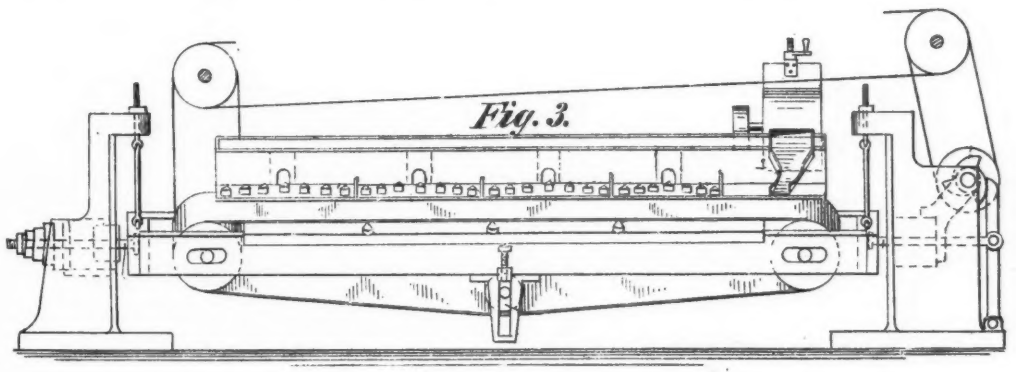
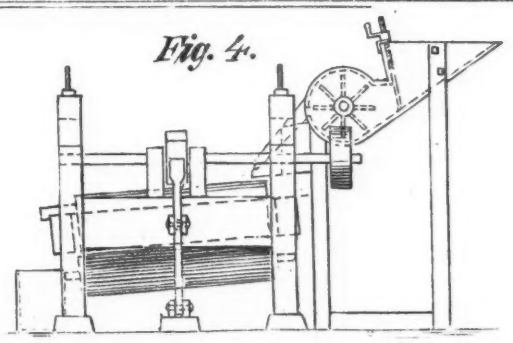


Fig. 4.



THE CORNING CONCENTRATOR.

different classes, according to the metalliferous-mineralogical constituency of the ore under treatment.

The peculiar advantages derived from the operation of this machine are the following:

1st. Middling products can be made.

2d. Such intermediate or transitional zones can be regulated as may appear necessary to preserve the purity of the headings and the leanness of the tailings.

3d. The middlings from these machines can be continuously and automatically drawn off and subjected jointly to another dressing on a "middling" vanner, to extract the remaining valuable product from which second operation the tailings and middlings will be sufficiently impoverished to be thrown away.

4th. The subdivision produced by this vanner, in certain zinc and pyritous ores, renders the compositions of the several classes of concentrates better adapted to subsequent metallurgical treatment.

In ore-dressing *parlance*, this machine might be termed a Rittinger side-percussion vanner. Its superiority over the old Rittinger table consists in the banded shape of the apron, namely, the shortness of the table, measured in the direction of the incline, which is made possible to use under the peculiar order of arrangement and combinations of the machine. By means of the movement imparted to the pulp particles by

the traveling belt, in addition to the forward propulsion characteristic of the Rittinger percussion, the parabolic zones are elongated and their respective discharges from the table are more easily regulated by variable quantities of clarifying water led on to the apron in flows of varying width and power. These ore parabolas on the old Rittinger table, with fixed, solid bottom instead of a comparatively narrow belt, whose line of travel is horizontal as peculiar to the machine in point, are more closely crowded together; and from their shape and narrow course down the table, with only small diversion from the line of the table's dip, these parabolic stripes are exceedingly sensitive and easily diverted from their normal paths by slight irregularities in feeding and in the pulp composition.

The modification of these features and the more advantageous drawing out of the pulp are among the distinguishing marks of this concentrator.

Fig. 1 is a plan view of my vanner, showing the parabolic curves formed on the traveling apron or belt by the particles of the ore-pulp fed thereon and separated in the order of their specific gravities during the progress of concentration and separation. Fig. 2 is a plan view of this side-percussion vanner, showing the rollers over which the traveling apron is carried and also the roller for tightening the same. Fig. 4 is a cross or end view, showing the lateral inclination of the belt with a pulp-mixer.

In the preliminary working out of this machine, which was experimented upon by the writer for a long time prior to its publication in patent form, a very complex ore in one of the celebrated mining districts of Europe, consisting of galena, arsenical pyrites, iron pyrites, and zinc-blende, with a quartzose, calc, and fluor-spar gangue, was successfully worked.

The pulp from this ore, which passed through a one mm. stamp-battery screen, was first graded into five classes in an ascending stream classificator. The first class, or coarsest pulp, was worked on a continuous four-compartment jig, while the remaining classes of the pulp were dressed on plain, longitudinal percussion-tables involving much hand-labor and many washings before a marketable product was produced. The diversion from these percussion-tables and the treatment of the second, third, fourth, and fifth divisions of the pulp on my machine gave, continuously, pure market products, corresponding to the grades of concentrates produced by the automatic jigging of class No. 1, referred to above.

The extreme delicacy of this concentrator, and the striking perfection with which the comparatively speaking infinitesimal amounts of the different minerals were actually made to walk out from the impure pulp mass, were thoroughly proved, and should insure a successful future for this machine.

No. 78 BROADWAY, NEW YORK.

Gold Production in Fahlun, Sweden.—The product for 1885 was 45,432 grams of gold, as against 18,520 grams in 1884; 478,640 grams of silver, against 442,473 grams in 1884; and 442·6 tons copper, against 459·9 tons in 1884. In two of the lower gangways, native gold has lately been found. The quartz is so rich that 226 tons yielded 23,776 grams of gold. Under these circumstances, a considerable increase of gold mining may soon be expected in this vicinity.

Natural Gas as Property.—Judge Snyder, in a case just decided by the Supreme Court of West Virginia, in which the question whether gas is property squarely arises, has associated natural gas in the list of natural elements in which there can be no property, in a general sense, as light, air, and water. Judge Paxson, of the Supreme Court of Pennsylvania, in a recent case admitted that it was not susceptible of an abstract legal definition, and that it should be determined, at least so far as it related to the phrase in oil leases, oil, or other mineral or volatile substances.

Peculiar Variety of Calamine from Siberia.—A peculiar variety of zinc carbonate (calamine) occurs in the southwest of Siberia. It is associated with barium sulphate and galena, which are imbedded in a matrix of limestone rocks. On submitting the calamine to analysis, the *crystals* gave the following composition:

Zinc	50·026 per cent.
Iron	2·773 "
Cadmium	0·921 "
Manganese	0·120 "
Silica	5·620 "
Carbonic acid	35·210 "
Water	5·330 "
	100·000

This specimen of calamine had a hardness between 5 and 6, and a specific gravity of 4·629. Its crystalline form was that of a right rhombic prism belonging to the prismatic system. It was also noticed that twinning among the crystals was not uncommon. We have never heard that calamine ($ZnCO_3$) has never been found in this crystalline form before; when it is found crystallized, it assumes the form of rhombohedrons. Therefore calamine appears to be a dimorphous compound, and is isodimorphous with the two crystalline forms of carbonate of calcium, namely calcite and aragonite.

Mining in Cuba.—The last volume of the Mineral Statistics of Spain gives also full details of the mines and mineral production of the island of Cuba, up to January 1st, 1885. At that date, there were in existence on the island—

Concessions.	Mineral.	Area in hectares.	Concessions.	Mineral.	Area in hectares.
91	Iron ore	5350	2	Quicksilver	24
41	Copper	427	15	Asphalt	391
5	Gold	84	3	Petroleum	465
3	Manganese	122	2	Naphtha	140

Of these concessions, the following were in productive operation during 1884: One asphalt in the Havana District, which produced 1799 tons, employing 10 workmen. Three asphalt in the Pinar de Rio District, producing 1250 tons, employing 22 workmen and two 4 horse-power engines. Two asphalt in the Matanzas District, producing 300 tons, employing 12 men. One petroleum in the Matanzas District, producing 283 hectoliters, with 6 men and one 4 horse-power engine. One naphtha in the Santa Clara District, producing 34 hectoliters. Three iron ore in Santiago de Cuba, producing 23,877 tons, employing 270 hands and engines of 86 horse-power. Three copper springs in Santa Clara and Santiago de Cuba, yielding 67 tons of cement copper and employing 27 hands. The exports of minerals for 1884, nearly all of which came to the United States, were as follows: Iron ores, 24,011 tons; asphalt, 6049 tons; cement copper, 41 tons. The imports of mining machinery and supplies, which as such are free of import duty, amounted in value to $170,639. The largest amount of this was by the Juragua Iron Company, Limited, for its new mines and railroad near Santiago. The stockholders of this company are the Bethlehem Iron Company, the Pennsylvania Steel Company, and the Cambria Iron Company. The report contains a number of analyses of the iron ores from some of the principal workings of the Juragua Company, which average about as follows: Metallic iron, 66 per cent; sulphur, 0·07 per cent; phosphorus, 0·041 per cent; silica, 2·03 per cent. The writer had occasion, some years ago, to make a very large number of phosphorus determinations on the ores from this district, the highest of which only showed 0·083.

S.

BOOKS RECEIVED.

[In sending books for notice, will publishers, for their own sake and for that of book-buyers, give the retail price?]

Manual of the Railroads of the United States for 1886, showing their Route and Mileage; Stocks, Bonds, Debts, Cost, Traffic, Earnings, Expenses, and Dividends; their Organizations, Directors, Officers, etc. By Henry V. Poor. New York: H. V. & H. W. Poor, 70 Wall street. 8vo, pages cxxxvii+1022. $6.

"The number of miles constructed in the United States in 1885 was 3131, the aggregate mileage for the whole country completed at the close of the year being 128,967; the rate of increase during the year being 2·4 per cent. The mileage, not including elevated roads, from which returns of earnings and traffic operations for the past year were received, equaled 123,110 miles, against 113,173 miles for 1884. The share capital of all the railroads making returns, including the elevated railroads, equaled $3,817,697,832, against $3,762,616,686 for 1884; their funded debts, $3,765,066, against $3,669,115,772 for 1884; their unfunded debt, $259,108,281, against $244,666,596 for 1884. The amount of share capital and indebtedness of all the companies for 1885 equaled $7,842,533,179, against $7,676,399,054 for 1884, the increase equaling $166,134,125, the rate of increase being about 2·2 per cent. The earnings of all the roads making returns, including elevated roads, equaled $772,568,833, against $770,684,908 for 1884, the increase equaling $1,883,925, the rate of increase being 0·24 per cent. The earnings from freight equaled $519,690,922; from passengers, $200,883,911; from miscellaneous sources, $51,993,930. The operations and expenses of all the roads for the year equaled $503,074,902, the net earnings being $269,493,931. The gross earnings upon the entire capital invested equaled very nearly 10 per cent; the net, nearly 3·5 per cent. The amount of interest paid the past year equaled $189,426,035, against $176,694,302 for 1884; of dividends, $77,672,105, against $93,244,835 for 1884. The percentage of interest paid on the funded debts of the companies the past year equaled 4·77 per cent, against 4·66 per cent for 1884. The percentage of dividends paid to the whole share capital equaled 2·02 per cent, against 2·48 per cent for 1884. The earnings per mile of lines operated the past year equaled $6265, against $6663 per mile for 1884, the decrease per mile equaling $398, the rate of decrease per mile being 5·8 per cent. In the mean time, the tonnage moved by the railroads has increased about 10 per cent, being 437,040,099 tons in 1885, against 399,074,479 tons in 1884. The movement of tonnage by rail is steadily increasing, there being at the same time a slight falling off in rates, the charge for moving a ton of merchandise one mile in 1885 being 1·057 cents, against 1·124 cents in 1884. The past year undoubtedly marks a point of lower depression in the earnings of our railroads, in ratio to their cost and mileage, than is likely to be witnessed for some years to come, the present year showing considerable improvement upon the past."

The present volume contains many new features, among which are tabular statements showing the dividends paid by all the railroad companies of the United States for the last eight years, and periods of payment; also, statements showing the highest and lowest quotations, monthly, for eight years, of all the railroad stocks and bonds dealt in at the various exchanges in the United States.

PATENTS GRANTED BY THE UNITED STATES PATENT-OFFICE.

The following is a list of the patents relating to mining, metallurgy, and kindred subjects, issued by the United States Patent-Office.

GRANTED AUGUST 17TH, 1886.

347,349. Process of Dephosphorizing Iron by Means of Fluorine. James Henderson, Bellefonte, Pa.
347,367. Hydraulic Cement. John Murphy and Nathaniel W. Lord, Columbus, Ohio.
347,368. Hose and Pipe Coupling. Patrick J. O'Connor, San Francisco, Cal.
347,377. Well-Drilling Machine. William J. Pringle, Ballitown, Pa.
347,388. Sand-Feeding Mechanism for Stone-Sawing Machines. David Shortsleeve, Rutland, Vt., Assignor to Edmund A. Morse, same place.
347,397. Chuck for Rock-Drills. James Throckmorton and Joseph G. Throckmorton, Harvey's, Pa.
347,438. Rock-Drill. Eugène Moreau, San Francisco, Cal., Assignor to Theodore W. Sterling, New York City.
347,440. Voltaic Battery. August F. W. Partz, Philadelphia, Pa., Assignor to the Partz Electric Battery Company, same place.
347,447. Metal-Founding Machine. Harris Tabor, New York City, Assignor to the Tabor Manufacturing Company, same place.
347,459. Method of Converting Tires into Bars, etc. C. B. Beach, Cleveland, Ohio.
347,461. Pipe-Coupling. Georges O. L. Peprévost-Bourgerel, Paris, France
347,469. Gas-Engine. John H. Clark, Boston, Assignor to Oliver Ames, Easton, Mass.
347,480. Pulverizing-Machine. Hermann B. Feldmann, Philadelphia, Pa., Assignor of one half to Stephen P. M. Tasker, same place.
347,488. Machine for Bending Metal Pipes. Charles M. Hunsicker, Dayton, Ohio.
347,594. Lead Pipe. Edwin Haas, Philadelphia, Pa.
347,607. Die for Lead-Presses. John Hooper, New York City, Assignor to the Colwell Lead Company, same place.
347,631. Covering for Pipes, etc. Truman Merriam, Milwaukee, Wis.
347,636. Compound Ingot Molds. Charles Parkin, Pittsburg, Pa., Assignor to Miller, Metcalf & Parkin, all of same place.
347,661. Tappet for Stamp-Mills. Carl A. Thies, Concord, N. C.
347,663. Apparatus for Carbureting Gas. Jonathan S. Tibbets, Jeffersonville, Ind.
347,691. Miner's Candlestick. Thomas Cox, Gloster, Mont.
347,693. Process of Decomposing and Carbureting Natural Gas. John M. Critchlow, Beaver Falls, Pa.
347,703. Regenerative Gas-Furnace. Emile Fourcault and Ernest Jacques, Dampremy, Belgium.
347,724. Mining-Pump. James B. Lyons, Norway, Mich.

REISSUE.

10,757. Process of Manufacturing Hydrocarbon Gas. William F. C. M. McCarty, Pittsburg, Assignor of one half to Henry Levis, Philadelphia, Pa.; said Levis Assignor to Adolph Ohl and Bernard C. Lauth, both of same place.

PERSONALS.

Mr. Frederick Amelung, who has been visiting different mining camps in Colorado, has returned to Atchison, Kansas.

The parties about to erect reduction-works at Portland, Oregon, have selected Prof. J. E. Clayton, of Salt Lake City, as consulting engineer.

Dennis Sheridan, mine inspector for Allegany and Garrett counties, Md., died at Cumberland on the 20th inst. At the last session of the Legislature, he was reappointed and confirmed as mine inspector, and had only served a few months of his second term.

Mr. Albert Williams, Jr., the Superintendent of the Michigan Mining School, at Houghton, is now making the necessary preparations for the opening of the school, which will take place September 16th. Under his able management and the advantageous situation of the school, it is destined to become one of the best in the country.

Sir John Anderson died in England, July 28th, at the age of seventy-two years. While in charge of the brass gun foundry at Woolwich Arsenal, he introduced many improvements and reforms, invented a bullet machine with a capacity of 40,000 bullets an hour, reducing the expense from 5s. a thousand to 5½d.; and later, he was chiefly instrumental in changing the methods of the manufacture of rifles at Enfield, substituting machinery for hand-labor.

FURNACE, MILL, AND FACTORY.

Clark & Dow's rail factory at Haverhill, Mass., was destroyed by fire on the 20th inst.

The Ewald Iron Company is preparing to open the old rolling-mills at Louisville, Ky., which have been closed for three years past.

The Girard furnace, Youngstown, Ohio, which has been in steady blast for two years, melted on the 22d inst., and the lining caved in. Loss said to be $50,000.

The Roller Chain Belting Company, of Columbus, Ohio, writes us that it is still very busy running full force, and that the outlook is good for a bright season's trade.

The Neo-Silicon Steel-Works, Sandusky, Ohio, were burned on the 18th inst. They were erected in 1872 at a cost of $200,000, but have been idle for the past two years.

The new Bessemer steel plant erected by Jones & Laughlins, of the American Iron-Works, Pittsburg, made its blow of steel on the 19th inst. The test was highly successful.

The new steel rod mill recently erected by the Braddock Wire Company, at Braddock, Pa., started up this week. It is said to be the only concern in the country that manufactures steel wire rods exclusively for the trade.

Work has begun at the Black Diamond Steel-Works, Pittsburg, Pa., to rebuild and refit the hammer shop and other portions of the works recently destroyed by fire. It is expected that the hammer shop will be in operation again within a month or six weeks.

The Weymouth Iron Company (nail manufacturers), with offices in Boston and plant in Weymouth, Mass., stopped payment and manufacture on the 20th inst. The trouble was caused by losses by the floods last spring and the suspension of the Bridgewater Iron Company.

The Rand Drill Company, of this city, has placed in the Calumet & Hecla mine, Michigan, twenty new power drills, and has sold to the Pabst Mining Company, in the Gogebic District, Wis., a plant of four drills, compressors, and other machinery used for drilling with compressed air.

The Hall rolling-mill, at Hubbard, Ohio, has been purchased by the Mahoning Valley Iron Company and Bonnell, Botsford & Co., of Youngstown, for $17,500. The mill has been idle for the past three years. The plant consists of a muck mill, bar mill, and 8-inch train, the machinery being in fair condition. The purchasers will at once begin making necessary repairs.

D. R. Lean, of Pittsburg, Pa., has contracted with the Indianapolis Rolling-Mill Company, of Indianapolis, Ind., to build a complete Siemens-Martin steel plant, which will consist of two 20-ton converters, and have a daily capacity about 80 tons. The output will be consumed by the company. It is expected that the entire plant will be finished by the first of the year.

Messrs. Meech & Co., of Cleveland, Ohio, have recently shipped a plant of machinery containing 200,000 pounds of metal to Parral, Mexico; also, a similar plant to Lower California. At Cleveland, a plant is erecting and fully equipping for the purpose of treating sample lots of ore, for the satisfaction of prospective buyers, thus enabling mine companies to test the value of the Meech system and its adaptation to any given ore.

Messrs. Westinghouse, Church, Kerr & Co., of New York City, have contracted to entirely remodel the plant at the Goulds Manufacturing Company, at Seneca Falls, New York, for the purpose of securing more economical results. The shops were originally operated by water-power, but the increase of the business has compelled the addition of steam. The engines at present in use have proved unsatisfactory in respect to fuel economy, and will be replaced by a series of independent Westinghouse engines.

The Wainwright Manufacturing Company, Nos. 65 and 67 Oliver street, Boston, and 93 Liberty street, New York, manufacturer of feed-water heaters, filters, expansion-joints, radiators, and corrugated tubing, has been forced by its numerous orders to enlarge its plant, and is erecting an addition to its factory of four stories, 31 by 78 feet, which will contain machine-shop and corrugating and radiator departments. Its former building has been moved, and will also be utilized as a machine-shop. By this change, it will be enabled to increase its product three or four times and to fill its accumulated orders.

LABOR AND WAGES.

The employés of the pipe mill of the Reading Iron-Works, Reading, Pa., who recently requested an advance in wages, have received an advance of from 10 to 15 per cent.

The convention of District No. 3, Federation of Miners, has been in session this week in Cumberland, Md., with closed doors. The greater part of the session was consumed in revising the constitution and electing new officers. Delegates were chosen to the convention of the National Federation, which meets in Indianapolis September 7th.

The miners on the Baltimore & Ohio Railroad have another reduction in wages staring them in the face. The smaller operators say that they can not afford to pay more than Congressman Scott, and accordingly Mr. Dewees, of the Republic Works, gave notice that he would pay only 2½ cents. He has been paying 2¾ cents. The miners accepted the reduction, and returned to work on the 26th inst. Several other operators have given notice of a reduction.

The Executive Committee of the Miners and Laborers' Amalgamated Association met at Pottsville on the 25th inst. A committee was appointed to take further action in the matter of the still unsettled difficulties between the Union Coal Company at Williamstown and its men. The proposition to demand a general advance of wages was discussed, and referred to a joint committee of the Amalgamated Association and Knights of Labor. It was determined to appoint Polish organizers to organize the miners of that nationality. An engagement was concluded with Henry George to deliver a series of lectures on the labor subject throughout the region.

COAL TRADE NOTES.

ALABAMA.

Mr. Alfred T. Brainerd, chemist, of Birmingham, has made the following analyses of native bitumen found in this State:

	Per cent.
Moisture	1·257
Volatile matter	77·754
Fixed carbon	16·817
Ash	4·172

Mr. Brainerd adds that this bitumen occurs in a liquid state, and has quite a flow in several places in the same locality where it is found. The orifice from which it comes is, however, small, and it is thought that by boring the flow can be increased and a larger daily product can be obtained.

CANADA.

PROVINCE OF MANITOBA.

The Canada Anthracite Coal Company is pushing work energetically in its mines, known as the Cascades, near Banff, and it is probable that in a few months anthracite coal will be placed on the market in Winnipeg. Tests are making of it in the large consolidated engines used by the Canada Pacific Railroad in the mountain, and a report will soon be available. Machinery for the full development of the mine is on the way. The tests so far have been made from the surface drifts, and the quality will improve lower down.

PROVINCE OF NOVA SCOTIA.

The auction sale of certain personal property of the Blockhouse Mining Companies, Cow Bay, Cape Breton, for unpaid royalties amounting to $12,706.35, which was ordered by the Commissioner of Mines in June, 1885, and which has been postponed several times, took place on the 20th inst. There were not many bidders, but the property was finally sold for $7000. It is stated that the government, at a cost of some $500, intends taking the rails and pumping out of the mine and allowing it to fill up, thus abandoning some hundred thousand tons of coal, for this coal can never be reclaimed if this is done. This seam is only one of several valuable ones under the lease. There is a shaft sunk some 200 feet to the next seam, the one now worked by the Gowrie Company. It is now estimated that at a depth of 200 feet more the coal will be struck.

ILLINOIS.

The Colfax Coal and Mining Company has been organized at Colfax, McLean County; capital stock, $10,000; incorporators, H. W. Ellington, William G. Anderson, R. P. Wood, D. T. Douglass, and George Hester.

The Chicago, Joliet & Streator Coal Company, has been organized at Chicago; capital stock, $100,000; incorporators, Hiram B. Scutt, Harry C. Brown, and Frederick K. Bours.

The Beardstown Coal and Mining Company has been organized at Beardstown; capital stock, $3000; to prospect for coal, oil, and gas; incorporators, H. Ehrhardt, F. A. Hammen, Thomas K. Condit, W. G. Unland, H. C. Keil, Anton Rink, and T. S. Mathews.

PENNSYLVANIA.

The statement of the Philadelphia & Reading Railroad and Coal and Iron Companies for July, 1886, as compared with the same month of 1885, shows an increase in gross earnings of $52,554; an increase in expenses of $160,870; a decrease in net earnings of $108,325. The statement for the eight months ended July 31st, 1886, as compared with the same period in 1885, shows an increase in gross earnings of $1,107,421; an increase in expenses of $1,559,708; a decrease in net earnings of $452,287.

ANTHRACITE.

The Susquehanna Coal Company, Pa., will not make any further attempt to recover the twenty-six bodies of the men who perished at Nanticoke on the 18th of December, 1885, by the caving in of the roof in slope No. 1, as such a task would be impossible, and has so advised Governor Pattison, who recently sent a letter to the company calling its attention to the complaints of the relatives of the miners, and asking if the company can take further action toward the recovery of the bodies. The State Geologist and Mine Inspector Williams in their reports to Governor Pattison, as we have already mentioned, both agree that further attempts at rescue would be foolish.

Two explosions of gas occurred at the Short Mountain Colliery, at Lyken, Pa., on the afternoon of the 23d inst., which burned twenty men seriously. The explosions were caused by lighting a lamp in the air-hole.

GAS AND OIL NOTES.

Exports of refined, crude, and naphtha from the following ports, from January 1st to August 21st:

	1886. Gallons.	1885. Gallons.
From Boston	3,479,102	6,326,182
Philadelphia	94,635,186	92,330,221
Baltimore	11,020,972	6,503,415
Perth Amboy	3,096,290	.....
New York	246,258,359	234,188,154
Total exports	358,489,909	339,347,972

ILLINOIS.

Natural gas has been struck in Mattoon at a depth of seventy-eight feet by the Peoria, Decatur & Evansville Railroad at its shops. Gas pipes have been connected with the air-chamber of the force-pump, and

gas for a steady flame is furnished. A large air-chamber will be constructed, and it is believed that enough gas will be obtained to light the shops.

PENNSYLVANIA.

Two Flannery water-gas plants are erecting in Pittsburg at two gas-works. These are the first works of the kind erected in that city. It is expected that they will be completed by fall.

The Baden Gas Company has contracted for the laying of its low-pressure system in Freedom, Beaver County. The main line down the river is almost completed. The low-pressure system will be pushed as rapidly as possible, as will the main up the river.

Fredricks & Calhoun have struck one of the largest gas wells in Alleghany County on the Mullen farm, at Glenfield. The gas was found at the depth of 1700 feet, in the same stratum in which the Dixmont well got a small flow. The well is located eight miles from Alleghany, being the nearest well to the city on that side of the river. The land was first taken up in hopes of getting oil. What will be done with the gas has not been determined.

An oil well was struck at Shousetown, fifteen miles from Pittsburg, on the 23d inst., by the Raccoon Oil Company. It began flowing at 85 barrels an hour. At midnight, it had increased to 125 barrels. On the 24th, it was flowing at the rate of 175 barrels an hour. This company owns leases covering an area of more than 5000 acres in the immediate neighborhood. Negotiations for the sale of the oil rights have recently been in progress, the parties being $30,000 apart and nearing each other. The sum of $450,000 was demanded; $420,000 was the last offer.

The Sewickley Heat and Light Company has been formed for the purpose of producing and supplying gas in Alleghany County. It will begin laying lines to supply the boroughs along the Ohio River at once. The company will take charge of the leases and property of the Sewickley Gas Company, which has now one well in the borough of Sewickley.

GENERAL MINING NEWS.

The total shipments of ore from Ashland during the season of 1886, and the week ended August 17th, were as follows:

GOGEBIC DISTRICT.

Ashland	35,326	Norrie	72,728
Aurora	44,878	Odanah	2,732
Ascherman	6,899	Pabst	9,105
Bessemer	3,590	Puritan	1,192
Brotherton	8,265	Sunday Lake	3,971
Iron Chief No. 2	530	Superior	827
Iron King	11,860	East Norrie	5,869
Ironton	7,344	Pewabic	55
Colby	140,536		
Germania	10,074	Total ore from Ashland	374,082
Kakagon	6,501		

ALASKA.

LAKE MOUNTAIN.—The Sitka *Alaskan* of July 31st, which has just been received, states that this company is steadily prosecuting its work, but is still retarded by the extraordinary lateness of the season this spring and summer. The tunnel is pushed ahead steadily. Much work has been done toward getting at the placer ground in front of the ledge, which it is desired to work away before erecting the necessary buildings for the protection and prosecution of the development of the ledges. The dam to catch the water from the melting snows of the basin is about completed, and for the first time since the work was opened, it can be prosecuted systematically and to advantage. A shipment of horses or burros is expected by the next steamer, to use for transporting lumber to the mine, which has been another serious obstacle to progress. The indications of the value of the property continue most favorable as the tunnel proceeds, while he placer ground is showing up far beyond expectation.

TREADWELL.—It is stated that this mine, on Douglas Island, has been shut down, owing to the expulsion of the Chinese miners, to which we referred last week.

ARKANSAS.

GARLAND AND MONTGOMERY COUNTIES.

HOT SPRINGS MINING AND SMELTING COMPANY.—This company has been organized with a capital stock of $3,000,000, at Hot Springs, with William J. Little as President; Charles Cratter, Vice-President; L. Farmer, Secretary; and O. F. Smith, Treasurer. The company will begin at once to develop its mines n Garland and Montgomery counties.

CALIFORNIA.

MONO COUNTY.

MAY LUNDY.—An injunction was granted in London on the 11th inst., restraining Mr. Davis, the vender to the above company, from receiving, and the company from paying, any portion of the purchase money payable under the purchase agreement until the claim of the plaintiff, Mr. Marcus Bebro, had been satisfied. From counsel's statement, it appeared that Mr. Josiah Caldwell and a Mr. George Crawford Harvey had agreed to pay all the preliminary expenses of the company up to allotment, and that they were to receive for this a sum of £70,000 in cash and shares after allotment. Being unable to find the necessary money for printing, posting, and advertising the prospectus, they applied to Mr. Bebro to assist them in raising the necessary funds; which that gentleman did. It was claimed that the company, Messrs. Davis, Caldwell, and Harvey, now decline to pay his agreed charges, namely, £2000 cash and £2000 shares, and hence the proceedings.

COLORADO.

ARAPAHOE COUNTY.

BOSTON & COLORADO SMELTING COMPANY.—The question of the removal of these works from Argo to Chicago or some other Eastern city, is still under discussion, but not finally determined.

BOULDER COUNTY.

CARDINAL GOLD AND SILVER MINING COMPANY.—This company has been organized at St. Louis with a capital stock of $3,000,000. The new company is incorporated under the laws of Illinois, with the following officers: R. L. Billingsley, President; Edward Whitaker, Vice-President; Ernest Michaelis, Secretary; J. W. Donaldson, Treasurer. The board will include the above and George D. Capen.

CHAFFEE COUNTY.

DENVER & RIO GRANDE ENGINEERS' MINING AND MILLING COMPANY.—The new concentrating mill, near Winfield, has started up.

CLEAR CREEK COUNTY.

The La Fayette and Mayflower lodes and the M. B. Graeff placer claim, situated in Spanish Bar Mining District, were sold at sheriff's sale last week, and were bought in by Robert Barbour for $5000.

LITTLE ALICE.—The company has decided to erect a stamp-mill on Fall River and to prosecute development-work upon its lodes west of Silver City. It is working placer property at that point with profitable results.

GUNNISON COUNTY.

GUNNISON SMELTING COMPANY.—The capital stock has been increased to $250,000.

LAKE COUNTY.

The Leadville *Herald-Democrat* reports the following:

A slight advance is reported in the smelting charges of Leadville reduction-works. As near as can be ascertained, there is no concerted movement, but a universal advance based upon the uncertainty of the silver market and a desire to recover the losses sustained during the past six months by the regular and marked decline of silver. It is reported that hereafter the smelters propose to demand a discount of ten per cent of the assay value of the silver in dry ores, such as the product of the Small Hopes, Matchless, Lee Basin, and Tip Top mines. The general advance, however, we are informed, will not be unreasonable.

BREECE.—Preparations are making to drain the lower workings and to get the entire property into a producing condition. The resources are still very extensive.

EVENING STAR.—An effort will probably be made soon to explore the lower contact in the eastern portion of this property. The water, which heretofore interfered with the work, has been drained out by the persistent pumping of the McHarg, Clontarf, and Maid of Erin shafts.

HIGHLAND CHIEF.—The task of repairing the damages sustained at the mine three weeks ago, through fire, is under way.

IDEAL.—At present, about twenty-five tons of ore are shipped daily. A new ore-body of fair grade has been disclosed on the lower level, being considerably beneath the previous resources. It is stated that a dividend will soon be declared.

LA PLATA.—At a recent meeting in London, the differences between the bond and shareholders were amicably adjusted, and a basis for the reorganization of the company was agreed upon that promises to do justice to both parties. A resolution was also adopted calling for an assessment equal to $240,000, which is to be paid in without delay. This amount will enable the company to discharge all its present obligations, and leave a handsome working capital for the operation of the smelter and further development of the company's mining property.

LEADVILLE CONSOLIDATED.—An order has been made by the United States District Court directing the lessees to sink the shaft that they agreed to put down to mineral when they accepted the lease and began work.

MATHEWS & WEBB CONCENTRATING COMPANY.—This company has been organized with a capital stock of $25,000; directors, Constantine L. Webb, Thomas F. Walsh, James F. Mathews, Frank Dillingham, and Chester A. Higby; operations to be carried on in Lake County and principal office to be in Denver.

QUARTET.—This company's property, adjoining the Katy mine, of the Ideal Mining Company, has recently begun shipping ore and shows promising prospects.

TIP TOP.—This mine has concluded a contract for 1000 tons of ore, and a new one entered into with the Boston & Colorado Smelting Company at Argo, for an indefinite period. The mine has recently been producing and shipping eighty tons of ore a day.

OURAY COUNTY.

SHERIDAN.—This mine has been leased for one year from September 1st.

PITKIN COUNTY.

MONUMENTAL TUNNEL COMPANY.—This company was formed in Aspen by C. A. Bussche, Manager; C. S. Wilson, Secretary and Treasurer; William T. Clark, William Madden, A. B. Ogden, A. P. Kimmel, and Jamas Fitzpatrick. The object is to run a tunnel in Little Monument Gulch, near Ashcroft, to cut the Traynor and Dauntless vein. It is estimated that it will have to run about 250 feet.

RIO GRANDE COUNTY.

BOBTAIL.—Negotiations have been pending with F. F. Riggs, owner of this mine, for its purchase or the privilege of putting in machinery. The parties referred to will leave for New York shortly with samples of Bobtail ore. The general impressi on is, that the machinery will be put in.

RIO GRANDE.—What course this compa ny will adop relative to working the mines of Summitville has not yet been made public. It is said that the creditors of the company are clamoring for their money, and the representatives of the company have assured them that they shall have it.

SUMMIT COUNTY.

ROBINSON CONSOLIDATED.—The mine at present is producing 90 to 100 tons of ore a week. The mineral is obtained principally from a spur of the main ore-channel, branching out below the 1200-foot level. The grade of the ore is very fair, and as the developments are leading into new territory, additional possibilities are in store for the property.

DAKOTA.

LAWRENCE COUNTY.

CALEDONIA.—The superintendent's report, dated the 16th inst., states that the east cross-cut advanced 8½ feet, making a total of 31½ feet. The drift south advanced 7 feet; total, 10 feet from west cross-cut. The drift on the east vein advanced 9 feet; total, 32 feet. The ore in all the drifts looks well.

IRON HILL.—The first shipment of coke has been received. Three car-loads will be received each week, and it is expected hereafter to keep the smelter in full blast. The product for the first half of August was fourteen bars, or about $13,000. The mill started up twenty stamps on the 20th inst.

UNCLE SAM.—Twenty stamps have been put in operation.

SITTING BULL.—The time for redeeming this property expired on the 21st inst.

PENNINGTON COUNTY.

HARNEY PEAK.—Myron Willsie, of Rapid City, has been engaged as superintendent by this company, which proposes to begin active development on a number of claims lately purchased by them.

IDAHO.

ALTURAS COUNTY.

A company to put in a sampler is organizing in Hailey by G. L. Havens, J. C. Conklin, Prof. W. P. Jenney, J. O. Swift, and others.

CUSTER COUNTY.

CHARLES DICKENS MINING COMPANY, LIMITED.—This company has been organized in London, with a capital stock of £250,000 ; shares, £1 each ; to acquire and work the Charles Dickens mine, on Norton Hill, which is opened to a depth of over 300 feet. Reports made state that much of the ore sent last season from the Dickens mine to the Custer mill averaged over $400 to the ton. The higher grade ore is stored in the mine, and the lower grade, of which there are some 5000 or 8000 tons, is on the dumps and in the storehouses. There are three veins on the Dickens location. Owing to litigation, the mine was idle during the summer and fall of 1884. On Dickens's Hill, outside of the Dickens mine, there has been much work going on all winter. Dr. James P. Welch, who has reported on the mine, estimates the value of the ore actually in sight and on the surface at about £225,000, of which a large quantity is on the dumps, and therefore, immediately available. The purchase price is £200,000, the most of which, it is said, can be paid in shares. Messrs. Bainbridge, Seymour & Rathbone, of London, are the consulting engineers.

MEXICO.

PALMAREJO MINING COMPANY, LIMITED.—This company has been organized in London, with a capital stock of £400,000, shares £1 each, to acquire and work silver and gold mines in the State of Chihuahua. It is stated that the mines are now worked at a profit, but more capital is required for developments. The venders are to receive as purchase-money £300,000, two thirds of which are to be paid in cash, and the rest in shares. The property consists of about 38,400 acres of freehold land, and comprises three mines or separate lodes, two modern mills containing together 25 stamps with all accessories, and numerous other buildings, forming a complete reduction establishment. The properties have been examined and explored by Mr. E. Applegarth, M.E., of London, and during the present season by Mr. A. E. Walton, M.E., of London. Their reports show that the mines, which are known as Dios Padre, Carmen, and Socorro, contain three large lodes, the Prieta, the Blanca, and the Rosario ; and that the width of Blanca is fully 8 feet, Prieta from 9 feet to 20 feet, and that Rosario is worked at the present time to a width of 16 feet. Silver and gold ores have been obtained that have yielded during the past twenty years 2,125,000 Mexican dollars, say £425,000.

The Mexican *Financier* reports the following : A ten-stamp mill is to be put up at Las Planchas de Plata, State of Sonora. The district is reported to be quite rich.

The mines of Atarjea in the lead mining district of Sierra Gorda, Guanajuato, produce 80 per cent of all the lead there extracted.

The stock of the Guadalupe el Fresnillo Mining Company, Pachuca, is quoted at $12,000 per barra, and that of the La Blanca at $16,000.

It is charged that some Americans from St. Louis have been badly taken in by the purchase of a gold mine in Sinaloa, and the facts in the case show the necessity of knowing the character of one's expert quite as thoroughly as that of the mine to be bought.

Some experienced miners who have visited the Concho River in Chihuahua, assert that the placer mines there will yield $2.50 per ton of earth washed. The great obstacle to success at the river is the lack of sufficient water, but a Boston miner is building a reservoir to give him a sufficient supply to last through the dry season.

According to a recent government report, mining in the State of Guerrero suffers from lack of transportation facilities and insufficient supply of laborers. It is urged that the federal government build a wagon-road from the capital of the nation to Acapulco on the Pacific coast, this road to serve as the main trunk of a system of interior roads. In the Mina District, an American company has a mining property that it is thought will pay well.

WEST ROSARIO SILVER MINING COMPANY, LIMITED.—This company has been organized in London with a capital of £80,000, shares £1 each, to purchase and work three government grants, named the West Rosario, New Porvenir, and San Ricardo, which have been recently reported upon by Mr. Henry J. McCulloch as being "a splendid set," and stated to contain 13 main silver lodes, besides numerous feeders, situated within a mile of the city of Pachuca, State of Hidalgo. The profit on working is estimated by Mr. Corning at $70 a ton. The vender has fixed the price of the grants at £40,000, payable on allotment of the shares of the company, £13,400 in cash and £26,600 in fully paid-up shares of the company. Mr. Frederick W. Bawden, M.E., Pachuca, Mex., will join the board after allotment as managing director. This company is apparently again floated on the strength of adjoining rich mines—as is frequently done in the English market.

MICHIGAN.

COPPER MINES.

ALLOUEZ.—Reports continue to be encouraging. The tributers are contemplating the immediate sinking of No. 2 shaft another lift, from the sixteenth to the seventeenth.

PENINSULA.—The work of unwatering this mine has been completed, and sinking is now going on at the bottom of No. 2 shaft, blasting being done on the hanging-wall, which proves rich in copper. Some work was done on the foot-wall, but it was found to be too poor to work at present price of copper. Hoisting ore has begun.

IRON MINES.

The following statement, given by the Marquette *Mining Journal*, shows the amount of iron ore shipped from the ports of this district for the season of 1886, up to and including Wednesday, August 17th :

	Tons.
Marquette—Marquette District	518,805
St. Ignace	39,431
Escanaba—Marquette District	327,105
Menominee District	507,002
Grand total of lake shipments	1,392,343

Shipments of Pig-Iron.

Pioneer furnace	2,975
Deer Lake furnace	560
Vulcan	7,329
	10,864

The gain over the shipments from the above ports during the same period in 1885 is 166,341 gross tons.

LAKE SUPERIOR.—A new shaft will be sunk at a point about midway between the two shafts now down in the hematite mine. It will be sunk in the foot-wall of the north vein, and have a pitch of about 65 degrees to the northeast. This shaft will be used as a timber shaft for some time, and will in time add considerably to the facilities for rapid ore-raising at the hematite. The shaft sinking a short distance west of C shaft on the Lake Angeline Company's property, has reached a depth of 95 feet, and has yet to strike the ledge.

ROCKLAND LAND AND MINING COMPANY.—At a recent meeting, it was decided to wind up the affairs of the company, dispose of the property, both real and personal, and divide the proceeds among the stockholders.

MINNESOTA.

ST. LOUIS COUNTY.

MINNESOTA IRON COMPANY.—During the season of 1886, and for the week ended August 17th, there were shipped from Two Harbors 169,733 tons of ore, from this company's mines.

MONTANA.

DEER LODGE COUNTY.

GRANITE MOUNTAIN.—At the meeting held in Philipsburg recently, the following trustees were elected : Charles Clarg, Louis Duestrow, Auguste B. Ewing, Paul A. Fusz, John R. Lionberger, Charles D. McLurk, Louis M. Rumsey, Moses Rumsey, and Andrew Warren. During the week ended the 21st inst., 31 bars were shipped, containing 30,885 ounces of pure silver, and 10·222 ounces of gold, valued at $28,000.

WEST GRANITE.—The Algonquin mill is cleaning out, and every preparation will be made to start up on West Granite ore within ninety days.

LEWIS & CLARKE COUNTY.

EMPIRE.—Only development-work is going on at present, and about 15 tons of ore are taken out daily, which is all the ten-stamp mill can crush.

NEVADA.

GARFIELD, LIMITED.—At a meeting of this company (to the organization of which we referred extensively in our issue of May 22d), held in London recently, it was stated that the company would take possession of the mines situated in the Garfield and Silver mining districts September 1st. The company's managing director and engineer, Mr. C. A. Moreing (of Bewick & Moreing), left London on the 17th inst. for the mine, to take over the property. The London *Mining World* says : We are also officially informed that the mines have been earning 30 per cent on the capital of £100,000 for nearly two years, and that they are now, and have for the last four months, been earning at the rate of 50 per cent a year. To probable investors we say, that it will be well to make considerab'e deductions from the earnings of this property, the fame of which, so far, has not reached this city.

CHURCHILL COUNTY.

NEVADA NICKEL AND COBALT COMPANY, LIMITED.—Operations will begin soon on the properties of this company, recently organized in London.

ELKO COUNTY.

NORTH BELLE ISLE.—The hoisting-works at the north end of the mine, which have lain idle for the past two years, will be placed in condition to resume operations immediately.

STOREY COUNTY—COMSTOCK LODE.

The Virginia City *Chronicle* reports the following :

CHOLLAR.—Cross-cutting on the 3200 level is suspended for the present, and the force is now concentrated in driving south from the station in the combination shaft. The drift is out 90 feet, and is penetrating favorable ground.

CONSOLIDATED CALIFORNIA & VIRGINIA.—During the week ended the 14th inst., there were shipped 1362 tons of ore to the Eureka mill. The average value of the ore milled during this period, according to assays from battery samples, was $27.78 a ton. This leaves, it is said, a margin of $13 a ton for shareholders after deducting the cost of production. Bullion valued at $34,811.75 (by assay) was shipped to San Francisco. Ten stamps of the California mill are now daily crushing 40 tons of ore extracted from above the 1750 level. This ore is worked by the Frue concentrators, which are doing excellent work, saving over 90 per cent per ton of the assay value of the ore. If the present experiment proves successful, the other batteries will be started up as soon as a sufficient number of concentrators to handle the crushings from the 80 stamps can be placed in position.

HALE & NORCROSS.—No important developments have been made in the extension of the east and west cross-cut started 70 feet north of the deep winze. The ground is perfectly dry, and no inconvenience is experienced on account of heat. The air supply is ample, and the 3200 level is pronounced much cooler than the 3100.

NORTH CAROLINA.

CABARRUS COUNTY.

UNION COPPER.—This mining tract, situated within the borders of Cabarrus County, and belonging to the Gold Hill group, which is an extensive and valuable property, it is said will be worked by an English syndicate, which proposes the erection of a large smelting plant where custom ores will also be worked. The building of a railroad from Salisbury to Gold Hill and other points in that mining district is proposed under the name of the Yadkin Railroad.

STANLY COUNTY.

LOUDER.—This mine, which is situated within a few miles of Albemarle, is one of the old mines of the section, but has never been worked with other than the crudest machinery. Mr. C. A. Shankle, of Mount Pleasant, will shortly begin work and erect a mill.

SOUTH AMERICA.

BRAZIL.

ASSURUA.—These gold mines at Chique-Chique, in the province of Bahia, have been reported on lately by two professors in the Escola Polytechnica of Rio de Janeiro. They calculate the three mines in the vicinity of Chique-Chique to contain about $150,000,000 worth of gold. Previous reports upon these mines have not been favorable, and their operation has not been remarkably successful.

VENEZUELA.

CALLAO.—The production for the month of July was 15,000 ounces of gold. The last reports from the mine were very satisfactory. The new twenty-stamp mill was completed, and expected to start August 1st,

UTAH.

SALT LAKE COUNTY.

EMMA HILL.—The long-expected engine for the purpose of ventilating the Buffalo tunnel, which is now 1200 feet in length, has been received.

FLAGSTAFF.—Work continues night and day in draining the mine.

FREDERICK.—The mine is worked vigorously.

NEW EMMA.—The prospects of the mine are said to be good.

SUMMIT COUNTY.

ANCHOR.—A body of water has been encountered in the shaft, necessitating more boiler capacity. A battery of two steel boilers, similar to the ones now in use, have been ordered from the East, which will double the steam capacity of the works. They will not arrive, however, till about October 1st. Meanwhile, the force at the mine will be somewhat decreased.

CRESCENT.—The force has been increased to about 75 men. The tramway brings down about 150 tons of concentrating and shipping ore daily.

MORGAN.—The grading for the hoisting-works is completed, and the sinking of the shaft begun.

SAMPSON.—The shipment of ore has been resumed.

VIRGINIA.

ROANOKE COUNTY.

It is stated that arrangements are making to open the gold mines at Roanoke, not far from the Roanoke River, which are said to yield profitably under the tests so far made.

WISCONSIN.

GRANT COUNTY.

Press dispatches from Lancaster state that Messrs. Gerhart Brothers & Esch, lead miners, have discovered at Dutch Hollow, at a depth of fifty-five feet, an arch crevice of lead, which continues rich as far as worked, to the depth of fifty feet, and is known to extend a distance of two miles. It is believed to be much deeper and longer than has yet been penetrated. Two shafts have been sunk, and arrangements made to pump out the water. From six to eight thousand pounds of lead are mined daily.

BULLION PRODUCTION FOR 1886—SPECIAL OFFICIAL REPORTS.

MINES.	States.	Month of July.	Year from Jan. 1st, 1886.
		$	$
Alice, G. S	Mont...	88,894	668,094
Belmont	Nev....	3,255	3,255
Boston & Montana, G.	Mont...	28,694	392,585
Caledonia, G.	Dak....	——	110,376
Christy, S	Utah...	27,200	165,361
Chrysolite, S	Colo...	——	**111,171
Colorado Central, S	Colo...	24,729	164,195
Daly, S	Utah...	77,916	389,645
Deadwood-Terra, G	Dak....	——	270,869
Derbec Blue Grav., G. S.	Cal....	12,873	109,342
Elkhorn, G. S	Mont...	——	120,889
Eureka, S. L.	Nev. ..	——	147,559
Father de Smet, G	Dak....	——	61,376
Freeland, G. S. C	Colo...	25,931	181,889
German Consolidated, G	Colo...	——	53,673
Granite Mountain, S	Mont...	97,900	839,000
Head Center Cons., S	Ariz...	——	4,633
Head Center & Tranq., S	Ariz .	——	25,818
Hecla, G. S. L. C	Mont...	——	251,303
Helena, G. S. L. C	Mont...	——	240,734
Holmes, S	Nev....	39,232	323,636
Homestake, G	Dak....	——	581,305
Hope, S	Mont..	——	71,022
Independence, S	Nev....	——	15,000
Iron Hill, S	Dak....	——	**204,559
Iron Silver, S. C	Colo...	——	398,681
J. D. Reymert, S	Ariz...	778	1,984
Kentuck, S	Nev....	——	*2,215
Lexington, G. S	Mont...	58,020	554,086
Montana Limited, G. S	Mont...	126,100	934,800
Moulton, G. S.	Mont...	70,179	448,085
Navajo, G. S	Nev...	29,536	62,138
New Pittsburg, S	Colo....	——	5,230
Ontario, S	Utah..	——	769,416
Plymouth Consolidated, G	Cal....	——	255,473
Plutus, G. L. C	Colo....	8,375	114,807
Ropes, G. S	Mich...	2,516	21,947
Standard Consolidated, G	Cal .	12,974	116,765
Tombstone, G. S. L.	Ariz....	† ——	**423,307
Total			$9,611,568

G., gold; S., silver; L., lead; C., copper; M., mica Silver valued by the different companies from $1@$1.29 per ounce; gold, $20.67. †Not including value of lead and copper. ** Silver valued at $1.29. * Royalty. ‡ Net. § Ore sales. ‖ Not official. —— No shipments during month mentioned.

MARKETS.

NEW YORK, Friday Evening, August 27.

Silver.

DATE.	London. Pence.	N. Y. Cents.	DATE.	London. Pence.	N. Y. Cents.
Aug. 21.	42¼	91¾	Aug. 25	42⅝	92⅜
23.	42⅜	91⅞	26	42⅝	92⅜
24.	42 9-16	92⅜	27	42⅝	92⅜

Market steady. An advance of ¼d. on rupees has given a little more tone to the market.

Gold and Silver Movements.—The value of the imports and exports of the two precious metals for the periods mentioned was as follows: For the month of July, 1886, exports, gold, $1,175,311; silver, $2,246,379. Imports, gold, $580,072; silver, $1,405,667. Excess of exports over imports, $1,435,951. For the seven months ended July 31st, 1886, exports, gold, $39,919,493; silver, $15,245,755. Imports, gold, $4,974,626; silver, $8,896,392. Excess of exports over imports, $41,294,230. For the twelve months ended July 31st, 1886, exports, gold, $42,797,932; silver, $28,541,554. Imports, gold, $20,735,009; silver, $16,419,957. Excess of exports over imports, $34,184,520.

Foreign Bank Statements.—The governors of the Bank of England, at their regular weekly meeting, raised the bank's minimum rate of discount from 2½ to 3½ per cent. During the week, the bank lost £409,000 bullion; and the proportion of its reserve to its liabilities was reduced from 44 1/16 to 43 11/16 per cent, against 45 per cent at the same date last year. The weekly statement of the Bank of France shows a loss of 500,000 francs gold and a gain of 3,375,000 francs silver.

Copper.—The market has been firm during the week under review, and it is stated that large orders from Europe to buy Lake copper at 10¼c. for export could not be filled. The prices have ruled at 10·25c. for spot; for September delivery, 10·25c. was bid and 10·35c. was asked; for December delivery, 10·60c. is bid. Sales reported at the Metal Exchange during the week amount to 1·12,500 pounds. Little has been doing in other brands, which continue to be quoted from 9½@10c. Chili Bars are reported steady in London to-day at £39 10. Best Selected is firm at £43.

Below we give a statement of the production, consumption, and export of copper in 1886, furnished us by Mr. S. Raunheim, of this city. The figures of production in the United States in 1885 are taken from the report of Mr. Charles Kirchhoff, Jr., to the United States Geological Survey, published in our issue of March 13th; those of the production in 1886, for the first six months, from official returns from the largest producers, only small mines being missing; those for the last six months are estimated, of course, and may be accepted as correct, provided the greater number of mines and smelters at Arizona and Montana, which have recently shut down, do not resume operations. The prospects are, that at present prices of copper they will not resume:

COPPER PRODUCTION IN THE UNITED STATES.

Source.	1885. Pounds	Estimated. 1886. Pounds.
Lake Superior	72,148,172	75,000,000
Arizona	22,706,366	18,000,000
Montana	67,798,864	46,000,000
Miscellaneous	3,2 2,364	3,000,000 (?)
Imported foreign pyrites	5 056,841	5,000 000 (?)
Total	170,932,607	147,000,009

Decrease in production, 24,000,000 pounds copper.

The consumption of copper in the United States, estimated for 1884 at 80 million pounds; for 1885, at 93 million pounds, will exceed 105 million pounds in 1886, provided the present demand remains the same during the next four months.

EXPORTS TO EUROPE DURING SEVEN MONTHS, JANUARY 1ST TO JULY 31ST.

MATERIAL.	1885. Tons.	1885. Pounds.	1886. Tons.	1886. Pounds.
Ing'ts, bars, etc	.....	23,359,255	.....	9,668,148
Mattes and ores	21.680	23,848,000	14,812	16,293 200
Seven mos., total, 1885	.....	47,207,255	Total, 1886..	25,961,348

Decrease in exports to July 31st, over 21 million pounds. Total exports to Europe in 1885, 81 million; estimated for 1886, from 42 to 45 million pounds. The stock of copper at smelters and warehouses amounts to about 14 million pounds, of which 4 millions, made of imported pyrites, must be exported to obtain refund of duty (2¼ cents a pound). The statistical position of copper here is excellent.

A telegram from Butte states that all the mines connected with the Anaconda Company have closed down, among which are the following copper mines: The Adelaide, Mat, Modoc, Wake-up-Jim, and Union Consolidated.

Tin.—Since our last report, the market has shown more animation, with a slight improvement in prices; early in the week, some spot and near-by parcels of no great magnitude were passed off at 21·65@21·70c., but offerings for shipment from London being held above these quotations, and buyers becoming more urgent, an improvement to 21·80c. has since taken place, at which fully 150 tons were placed, spot August and September delivery, also prompt shipments from London.

The London market has varied but slightly; it opened at £98 for spot, touched £98 10s., and closes to-day rather weak at £98 5s.; three months, £99 7s. 6d.

Our supplies so far this month have been liberal; on the other hand, consumers have been compelled to buy more freely to cover their necessities.

Quotations at the Metal Exchange have been as follows: For spot, 21·80@21·90c.; August, 21·75@21·95c.; September, 21·75@21·95; October, 21.75@21·90c.; November, 21·70@22c.; and December, 21·65c. At the Exchange were 90 tons at 21·80c., and 20 tons at 21·75c.

The shipments to the United States for the first six months of 1886 from the Straits Settlements were 31,533 piculs, against 16,051 for the same period of last year.

Lead.—But little change in the market is reported, which has ruled without much variation at 4·75c., at which a few hundred tons were sold for August and September delivery, and about 400 tons more are obtainable at the same figure. It is said, however, that there has been only one seller at that figure, all the others being out of the market at 4·80c. Two hundred tons refined German ex-vessel arrived, sold at 4·80c. Cable advices of Soft Spanish to-day, £13. English lead, £13 8s.

We quote manufactures: Sheet-Lead, 7¾c. net, and Lead Pipe, 6¾c., less the usual 20 per cent discount. Shot, Buck and Chilled, $1.45 per bag, in 25-pound bags.

Messrs. Everett & Post, of Chicago, telegraph as follows to-day:

The market remains about the same—if any thing, a shade weaker. There is but little doing, and demand from hand to mouth only. Borrowers holding off; refiners and other holders, anticipating better prices, have withdrawn from the market at present, and refuse to make sales for future delivery at present prices. Market closes at 4·65c. asked.

Messrs. John Wahl & Co., of St. Louis, telegraph as follows to-day:

There is nothing new to report. Business continues very dull, with but little prospect of any immediate improvement. Market remains about the same—if any thing, a shade weaker. Sales during the week have been from 150 to 200 tons Chemical at 4·57½c.@4 60c; 100 tons Soft Missouri sold at 4.57½c.@4·60c.; 200 tons Desilverized, at 4·60c. At the close, the market is dull, and little inquiry, as consumers seem fairly well supplied for the present.

Spelter.—Silesian has been firm. In the London market, quotations are £14 7s. 6d.; here we quote 4½@4¾c. for Western brands, according to quality; 6¼@6½c. for New Jersey; and 8¾c. for Bergenport Lehigh. Foreign Spelter, 4·80@4·90c.

Sheet-Zinc.—Domestic is quiet at 5½@5·85c.

New Jersey Zinc Oxide is quoted 3¾@4¼c.

Antimony.—Some activity has been displayed at 9@9¼c. for Cookson's; little has been doing at 7·90@8c. for Hallett's.

Nickel.—We quote 60@70c. nominal.

Bismuth—Is quoted at $2@$2.25 a pound.

Aluminium—Is quoted at $1 an ounce.

Quicksilver—May be quoted at 51@54c.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, August 27.

Iron Ore.—The following are standard prices of Lake ores at Cleveland, but we understand they are shaded :

No. 1 Specular and Magnetic Bessemer ores, per ton	$6.00@6.25
No. 1 Specular (non-Bessemer) ores, per ton	5.00@5.50
Bessemer Hematites	5.00@5.50
Non-Bessemer Hematites	4.00@4.50
Gogebic Range ores	5.00@5.25

Freights from Escanaba $1@$1.15 a ton, Marquette $1.40, and Ashland $1.40.

New York prices for foreign ores are from 8@9 cents per unit.

American Pig.—This season of the year generally shows some activity in this market ; but so far, it has not made its appearance, and nothing at all is doing in the business of future delivery. The sales made are only for immediate use. The situation remains the same as last week, with prices unchanged.

We continue to quote for standard Lehigh brands, tide-water delivery : No. 1 X, Foundry, $18@$18.50 ; No. 2 X, Foundry, $17@$17.50 ; Gray Forge, $16@$16.50 ; while less popular brands sell 50c. or $1 below these figures, and fancy brands go as much above them.

Scotch Pig.—There is no change of any importance in this metal, and we continue to quote Coltness, $20 ; Gartsherrie, $19 ; Summerlee, $19.50 ; Dalmellington, $18.50 ; Langloan, $19.50. Cables to the Metal Exchange to-day quote : Coltness, 47s. ; Summerlee, 45s. 6d. ; Langloan, 43s. ; Gartsherrie, 43s. 3d. ; Glengarnock, 42s. 3d. ; Dalmellington, 40s. 6d. ; Eglinton, 39s. 6d. ; Warrants, 39s. 8d. ; Middlesboro', No. 3, 30s. Freights are 5s. nominally.

Bessemer Pig.—Nothing has been doing in this metal and we continue to quote Domestic Pig at $17.75@$18.25 at the furnace, and Foreign, ex ship, $18.75@$19.

Spiegeleisen.—There is very little demand, and probably there will be none for the present. We quote English, $25@$25.25, and German, $25 for 20 per cent. Eighty per cent ferro-manganese is quoted at $62@$65.

Structural Iron and Steel.—We continue to quote Angles, 2@2·10c. delivered ; Tees, 2·30@2·45c. ; Iron Beams and Channels, 3c. base, for American ; Steel Angles, 2·30@2·45c.

Steel Rails.—There is little of importance going on in this line. Only small orders have been placed. The ruling quotations continue at $34@$35 at Eastern mills. The heavy orders to which we referred last week have not yet been placed. Nothing has been done in Foreign Rails.

Steel Plates.—We quote 2¼@2¾c. for Tank ; 3@3¼c. for Boiler and Ship Plates ; 3½c. for Flanges ; 4@4½c. for Extra Flange and Fire-Box Plate.

Merchant Steel.—A fair business has been done. Our quotations are : American Tool Steel, 7½@10c. ; special qualities, 11@20c. ; Crucible Machinery, 4@5c. ; Bessemer and Open-Hearth Machinery, 2¼@2½c.

Plate Iron.—Common Tank, 2@2¼c. ; Refined, 2¼@2⅝c. ; Flange Iron, 3¼@3½c. ; Extra Flange, 4@4·25c.

Bar Iron.—We quote : Refined at 1·70@1·90c. ; Common, 1·60@1·70c. Store prices are ·10@·20c. higher. An advance may be looked for if the mills are forced to advance wages.

Steel Rail Blooms.—Several sales are reported and others are pending. We quote nominally at from $24@$24.50.

Old Rails.—These continue to be offered at $20.

Cast-Iron Pipe.—We continue to quote $32.50 per ton for 4-inch pipe ; $31.50 for 6-inch ; and $28.50 for 48-inch, at the foundry, as about the bottom.

Scrap.—We quote $18@$19 for Wrought, and $13@$14 for Cast.

Rail Fastenings.—We quote Spikes, 2·35@2·45c. a pound delivered, and 1¾@2c. for Angle Fish-Bars.

Philadelphia. August 26.

[From our Special Correspondent.]

Taking the iron trade all through, there is a perceptible improvement in demand and a tendency toward higher prices, already manifested in more firmness.

Pig-Iron.—Since last Friday, business has been irregular—one day good, the next quiet. To-day's sales have been large, especially for forge iron for early delivery. Sales of 100-ton lots have been made at $15.75@$16.25 ; and standard makes are likely to go quickly. Contracts are about made for the rest of the year. Foundries are firm at $18.50@$19, and at $16.50@$17.50.

Foreign Material.—Very little business is done in Bessemer. Spiegel is dull at $25.50 quoted. A few large lots of Bloom and some Slabs will be under contract soon, for early delivery at $24 and $28 respectively.

Merchant Iron.—The demand has been good all the week at 1·70@1·90c., although four or five mills are finishing up common iron orders at a little less. Material is hardening, and labor has gained a little advance, so that after all the improved prices mean nothing to the manufacturer except that more buyers and more business are coming in.

Merchant Steel.—The increasing supply of merchant steel is keeping prices very low. All our mills are fairly off, and we look for an active fall and winter.

Sheet-Iron.—Card rates remain unchanged, and business is good.

Wrought-Iron Pipe.—The usual rush of business is reported at old discounts.

Skelp Iron.—Quotations, 1·90c.

Nails.—Demand active at $2.10, and no stocks to trouble makers. Builders are active buyers.

Structural Iron.—Angles are 1·90@2c. Combination prices, 3c. The output of mills is increasing. Some contract work has been secured, but of small proportions. Considerable Southern railroad bridge work is looked for at an early date.

Steel Rails.—Managers report a number of small orders at $35@$35.50, and two large orders aggregating 10,000 tons at figures not given.

Old Rails.—Several lots running from 800, 500, to 400 tons, and for smaller quantities, have been bought at prices ranging from $20@$21. Demand is very urgent, and agents are scouring around the country. Inquiries on hand aggregate between 4000 and 5000 tons.

Scrap.—Scrap is once more disappearing from yards. Selected is $20@$21. Inferior stuff is also wanted.

Pittsburg. August 26.

[From our Special Correspondent.]

The past two weeks have shown considerable activity in raw irons. The sales, particularly of standard or favorite brands, have been liberal, exceeding the amounts sold during the same time in 1885 by several thousand tons.

Prices have been steadily maintained. Holders of No. 1 iron are not disposed to accept a decline. The volume of business is largely increasing. The outlook for the fall trade is certainly very encouraging. There is one great drawback in Pittsburg. We have several large dealers who refuse to furnish information that could not injure them, and would benefit the city, and furnish information to the outside world that would be a general benefit. Happily, this number is small, and the sooner they become a little more communicative, the better. On the other hand, there are other parties that view the matter in its proper light, and furnish the necessary information. May their tribe increase !

In the lower grades of iron, there is considerable competition for business. The position, therefore, while favorable as to the amount of business, is one of considerable perplexity as regards prices. Hence the irregularity and hesitancy with which any demand for higher prices is made.

While pig-iron can not be called strong, any one waiting to buy a large block would probably call it so before he concluded his purchase with any of our city furnaces. The demand for Southern iron seems to be dying out. No one looks for lower prices, and for the time being no one is much afraid of any sudden advance. The supply is equal to the demand.

Pig-Iron.—Following are the current rates :

Coke or bituminous :	$	$
Foundry No. 1	17 25@17.75	
Foundry No. 2	16.25@16 75	
Gray F., No. 3	15.00@15.50	
" " No. 4	14.50@14.75	
White	14.50@15.00	
Mottled	15.00@15.50	
Silvery	15.50@18.50	
Bessemer	17.50@18.00	
Charcoal :		
Foundry No. 1	21.50@22.50	
Foundry No. 2	20.00@20.50	
Cold-Blast	23.00@25.00	
Warm-Blast	19.00@23.00	
20 p. c. Spiegel	27.50@	
Muck-Bar		27.00@27.25
Steel Blooms		31.00@36.00
Steel Slabs		29.00@33.00
Steel Crop Ends		22.00@
St'l Bl'm Ends		21.00@
Old Iron Rails		21.75@22.50
Old Steel Rails		22.50@22.75
No. 1 W. Scrap		17.50@18.00
No. 2 W. Scrap		14 00@14.50
Steel Rails		36.00@36.50
" light sect's		37.00@40.00
Bar Iron		1.70@ 1.75
Iron Nails		1.90@ 2.00
Steel Nails		2.00@ 2.10

PIG-IRON SALES.

Coke and Coal Smelted Lake Ore.

500 tons	Gray Forge	$16 00	cash.
1,000 "	Bessemer	17.50	"

Coke, Native Ore.

500 tons	Gray Forge at furnace	$14.25	cash.
200 "	No 1 Foundry, all ore, at furnace	17.00	"
100 "	Gray Forge	15 75	4 mos.
75 "	No. 2 Foundry	16.15	cash.
25 "	No. 2 Foundry	16.50	4 mos.

Old Rails.

200 tons	Old Iron Rails	$21.75	cash.

Cinder.

300 tons	Cinder	Net, $2.15	cash.

Scrap-Iron.

100 tons	Wrought Scrap	Net, 15 50	cash.
50 "	Cast Borings	Net, 12 50	"

Louisville. August 25.

[Reported by GEORGE H. HULL & Co.]

The market for pig-iron during the last week has been firm in tone, but quiet. Sales have not been large, owing principally to scarcity of iron sought for. Many of the Southern furnaces have withdrawn from the market entirely ; others are offering only a few grades ; others still are in the market for most grades. The difference between the selling price of inferior irons and the asking price of the best brands is fully half a dollar a ton.

We quote for cash in round lots as below :

PIG IRON.

Southern Coke, No. 1 Foundry	$16.50@$17.50
" " No. 2 "	15.50@ 16.50
Hanging Rock Coke, No. 1 Foundry	17.00@ 18.00
" " Charcoal, No. 1 Foundry	19.00@ 21.00
Southern Charcoal, No. 1 Foundry	17.00@ 19 00
Southern Coke, No. 1 Mill, Neutral	14.50@ 15.50
" Charcoal, No 1 Mill	16 00@ 17 00
White and Mottled, different grades	12.00@ 13 00
Southern Car-Wheel, Standard Brands	23.00@ 24.00
Hanging Rock, Cold-Blast	23.00@ 25 00
" " Warm-Blast	19.00@ 21.00

COAL TRADE REVIEW.

NEW YORK, Friday Evening, August 27.

Statistics.

Production Anthracite Coal for week ended August 21st, and year from January 1st :

TONS OF 2240 LBS.	1886.		1885.	
	Week.	Year.	Week.	Year.
P. & Read. RR. Co.	268,678	6,870 568	270,107	6,587,792
L. V. RR. Co.	131,815	3,673,871	141,545	3,323,862
D. L. & W. RR. Co.	104.593	3,020,837	130,873	2,730,597
D., & H. Canal Co.	79 535	2,162 677	79,161	1,799,212
Penna. RR.	42,825	2 022.412	69,549	2,002,146
Penna. Coal Co.	32,180	788,302	29,182	783,176
Penna. Canal Co.	13,768	246,301	11,206	214,683
Total	673,394	18,784,968	731,623	17,441,467
Increase		1,343,501		
Decrease	58,229			

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Production for corresponding period :

1881	16 798,470	1883	18,204,683
1882	17,301,166	1884	17,820,668

Production of Coke on line of Pennsylvania RR. for week ended August 21st, and year from January 1st :

Tons of 2000 pounds.

	1886.		1885.	
	Week.	Year.	Week.	Year.
Allegheny Region.	3,503	116,820	4,088	122,230
West Penn. RR.	2,534	69,325	1,538	31,677
Southwest Penn. RR	53,313	1,648 247	35,332	1,236,625
Penn. & W. Region	5,979	208,720	4,358	155,879
Monongahela	1,231	83,197	1,051	63,979
Pittsburg Region				
Snow-Shoe	879	15,955	546	10,752
Total	67,439	2,142,264	46,913	1,621,142

The Norfolk & Western Railroad Company reports shipments of Pocahontas Flat-Top coal for the week ended August 21st, 1886, and year from January 1st, as follows, tons of 2000 pounds : 1886, week, 21,066 ; year,

522,062; 1885, week, 12,080; year, 360,694. Increase, 1886, week, 8986; increase, year, 161,368.

The report of the total output of coal from the mines on the line of the Chesapeake & Ohio Railroad for the week ended August 7th, 1886, and year from January 1st, is as follows: 1886, week, 21,081 tons; year, 701,984 tons; 1885, week, 17,978 tons; year, 651,578 tons. Increase, 1886, week, 3103; year, 50,406 tons.

Production Bituminous Coal for week ended August 21st and year from January 1st:

Tons of 2000 pounds, unless otherwise designated.

EASTERN AND NORTHERN SHIPMENTS.

	1886. Week.	1886. Year.	1885. Week.	1885. Year.
Phila. & Erie RR...	118	7,740	....	18,697
*Cumberland, Md..	71,372	1,330,120	57,557	1,711,932
Barclay, Pa.....	3,584	123,294	4,360	151,860
*Broad Top, Pa.				
H. & Broad Top RR.	8,323	241,227	1,698	99,353
East Broad Top....	.....	.....	.....	.....
Clearfield Region, Pa.				
Snow Shoe.....	3,422	64,280	1,544	94,502
Karthaus (Keating)	4,999	78,694	2,111	80,586
Tyrone & Clearfield	42,139	1,270,023	41,125	1,860,587
Alleghany Region, Pa.				
Gallitzin & Mountain....	10,710	442,329	8,153	326,247
Total	144,667	3,557,707	116,548	4,343,764

* Tons of 2240 lbs.

WESTERN SHIPMENTS.

Pittsburg Region, Pa.				
West Penn RR.....	6,113	219,168	3,019	149,019
SouthwestPenn.RR.	2,585	114,832	2,776	63,382
Pennsylvania RR...	2,787	165,002	3,142	137,056
Westmoreland Region, Pa.				
Pennsylvania RR...	25,685	704,594	23,863	727,897
Monongahela Region, Pa.				
Pennsylvania RR...	6,302	243,172	5,473	171,581
Total.....	43,452	1,446,768	38,273	1,248,935
Grand total	188,119	5,004,475	154,821	5,592,699

Anthracite.

The coal combination has not worked so successfully for years as it has for the past month. In fact, the harmony that prevails, and the firmness of prices all around, are as great a surprise to the officers of the large companies as to outsiders.

The demand for coal has increased considerably during the past week, and the outlook encourages the belief that there will be a much larger demand, at even higher prices than now prevail.

There will be a meeting of the general sales-agents on Monday, to consider a further advance in prices. There will be some objection to its going into effect immediately, but we think the chances are, that it will.

We think it safe to purchase coal for two months' requirements, and advise doing so. We see nothing to prevent the companies from carrying out the intentions of the combination during the remainder of the year, while we believe that it is their desire and intention to do so, and that they have the ability to accomplish their object.

The local combinations under the management of the Western Association are becoming very unpopular with the public, and it is not unlikely that there may be more indictments by grand juries for conspiracy. Threats of this are made. The Chicago *Tribune* of the 20th inst. makes a very complete *exposé* of the manner in which the business in that city is conducted. That paper apparently has evidence that if presented to a grand jury might be unpleasantly dangerous to some of the gentlemen in the coal trade.

The boatmen's strike continues. The main difference between the boatmen and the shippers appears to be the holding of the guy-rope. As the boatmen are asking for an advance in wages of about 40 per cent, we think they make a mistake in standing on this question, unless they can show that their time can be valuably occupied while the boat is unloading. However, we have hopes that the strike will soon terminate.

We quote net prices of ordinary free-burning coals f.o.b., as follows:

Lump	$3 15	Chestnut.....	$3.15
Steamboat....	3.15	Pea.....	2.00
Broken.....	3.15	Buckwheat .....1.50@1.75	
Egg	3.25	Dust..... ....1.25@1.40	
Stove	3.60		

Bituminous.

Owing to the boatmen's strike, the shippers are not able to supply all the coal asked for on contracts in in this harbor, so that the market is not tested. The outlook, however, is by no means brilliant.

Buffalo. August 26.

[From our Special Correspondent.]

The several conventions have come to an end, and our citizens pursue the even tenor of their usual ways. Our visitors were well pleased with the courtesies extended to them, and carried away the liveliest feelings of good will will for our people and best wishes for our city's future prosperity, accompanied with the hope that they might soon again enjoy our hospitalities and charming summer climate.

The report that the output of anthracite coal for September will be 2,750,000 tons was deemed quite satisfactory by our shippers and dealers, and is significant of fair living profits, combined with steady trade for the fall and winter months.

There are no changes to note in the coal trade, and coke rules as in my previous letter. "No news is good news" in the present instance. "Eternal vigilance" prevails among our anthracite coal dealers, with beneficial results to all concerned.

It is said that harmony does not prevail among the railroad agents here, as the old charge of cutting coal rates has again been made. A special meeting on the subject will be held at Niagara Falls to-day.

Your correspondent was a delegate to the Canal Convention at Syracuse yesterday. The proceedings have been telegraphed over the State, therefore nothing need be said but that "Federal aid" was emphatically sat down upon.

Coal freights are strong with upward tendency. The movement is light, as noted below. The coal shipments by lake Westward from August 19th to 25th, both days inclusive, aggregated 42,360 net tons; namely, 21,450 to Chicago, 10,910 to Milwaukee, 2600 to Green Bay, 1100 to Sandusky, 780 to Racine, 720 to St. Clair, 250 to Port Huron, 100 to Bay City, 1650 to Duluth, 400 to Toledo, 1400 to Superior, 400 to Saginaw, and 600 to St. Joseph's, Michigan, making a total for the season of 826,080 net tons. The engagements and rates reported were, per net ton, as follows: 70c. to Chicago, Green Bay, and Milwaukee; 75c. to Racine; 60c. to Escanaba; 50c. to Marquette; $1 to St. Joseph; 40c. to St. Clair; 20c. to Detroit, Sandusky, and Toledo; and to Superior and Duluth on private terms, supposed to be 50c.; closing strong, with little tonnage offering and stocks fair; vessels wanted for Chicago, Milwaukee and Duluth. Agents are asking 5 cents advance.

The receipts of coal at this port by canal for the third week in August were 4361 tons; the shipments for the same period, 874 tons.

The coal charters by canal reported during the past week were as follows: 1 load to Syracuse, 60c. gross ton free in and out, and 1 load to Rome, 90c. net ton, free in, but captain to pay 10c. unloading. To-day, boats very are scarce and wanted; freights are higher, the nominal asking rate, $1.40 to Albany and Troy, and $1.75 to New York, captain to pay loading and unloading.

Boston. August 25.

[From our Special Correspondent.]

The coal market is still in its waiting period, and the only really noteworthy fact is, that no weakness has been developed at this port. The new prices are apparently nailed to the mast-head, where they hang without so much as a flutter, for the want of trade-winds. The fact remains that we are one week nearer cold weather, and the maintenance of the prices seems to be so much nearer also. The demand, thus far during the month, has been of the lightest character. No trade of any amount is looked for until September. The confidence of local agents in the ability of the companies to hold on is unabated, and even greater than before. The nominal f.o.b. prices are $3.75 for Stove; $3.30 for Broken, Egg, and Nut; $2 for Pea; $1.40@$1.50 for Buckwheat. Hard broken is held by some of the companies at $3.75.

We hear of a little more trade among the bituminous agents, and it would be difficult to buy as low as $2 f.o.b. The general "asking" price is $2.15, with but few agents of first-class coal really desirous to sell at any price.

Freights are unchanged, being fully as firm as last week.

We quote rates exclusive of discharging:

New York, 80@90c.; Philadelphia, $1@$1.05; Baltimore, $1.10@$1.15; Newport News and Norfolk, $1.05@$1.10; Richmond, $1.10@$1.15; Cape Breton, $1.85@$2; Bay of Fundy, $1.60.

There is a light movement among retailers; but the return of people from the beach and mountains always brings a little boom to the retail trade. Prices are unchanged.

Pittsburg. August 26.

[From our Special Correspondent.]

The coal trade continues dull, and prices are without change. The last coal shipment was a fraction over two million bushels, leaving in the pools for the next run about three millions. This will be slightly increased. The last run that parties succeeded in reaching port with will remain at Cincinnati and Louisville until there is a sufficient rise to forward it South. The present season has been far from a successful one for the coal men. Competition and low prices have done the work. Nominal rates: River, wholesale, f.o.b., 3¾@4¾c. per bushel; Railroad, f.o.b., 4¼@4¾c. The market is steady for Connellsville coke. Prices are maintained, all the ovens are in full operation, and a large number of new ones are building, and will soon be in operation. Present rates: Blast-Furnace, $1.50, f.o.b. cars at ovens; Foundry, $1.75; Crushed, $2.25.

FINANCIAL.

Mining Stocks.

New York, Friday Evening, August 27.

The mining market continues to slumber, and there seems to be no hope of its early awakening. Sales still show a large decrease, amounting to 13,425 shares, as compared with last week. The total transactions were but 36,310 shares. Prices fluctuated but little.

Sutro Tunnel was the most active stock on the list, some 12,200 shares changing hands at 7 and 8c. Consolidated California & Virginia was active, with higher prices at from $2.10@$3. The ore now produced is said to be of a much better grade. In another column, we refer more extensively to this. Hale & Norcross was firm at from $2.30@$2.40. Ophir, at from $1.30@$1.55. Navajo was active at from 64@78c. in the beginning of the week; no sales have been made since Wednesday.

Considerable interest is shown in Bodie and Bulwer, especially in the latter, which advanced from 98c.@$1.65. Bodie opened at $2.80, reached $3 on Tuesday, and declined to-day to $2.60. Standard sold at 81c. Mono, at $2.70. Quicksilver Preferred still holds its own at $25.50.

A downward movement was shown in Homestake, which ruled at from $19.50@$18.50. A recent visitor to this mine speaks in glowing terms of the great amount of "ore in sight." Deadwood sold at $2.55. Caledonia is still lower at from 60@55c. Father de Smet is asleep!

We refer our readers to our St. Louis letter, which gives information relating to many of the Colorado stocks. Here, they seem to have lost favor, though the splendid condition of many of the properties does not warrant such action. A few sales only are reported here in Chrysolite, at from 50@55c; in Leadville, at 29@31c. Robinson, at 50c.

The "good old" Ontario is also going down, and now stands at $25.50; but a few weeks ago it sold at $30. Horn-Silver shows but little life, and remains at from $2.30@$2.40.

Silver King is down to $5.88. Moulton is firm at $1.95.

Coal Stocks.

Tight money and European complications have had a demoralizing effect on the stock market during the past week. The coal stocks acted in sympathy with the rest of the market, but have shown considerable strength withal. The improving condition of the coal trade, and the harmony and better judgment shown by the managers, are giving speculators, at least, more confidence in the shares of the companies.

The Delaware & Hudson Canal Company declared, on Wednesday, a dividend of 1¼ per cent. There was some talk on the street of this being reduced or passed.

The dealings in Delaware, Lackawanna & Western aggregated 123,968 shares at $127⅞@$129¼, closing at $128¾. Delaware & Hudson ranged between $99¼ and $101, and closed at $100⅝, with sales of 16,436 shares. Jersey Central, with dealings of 5157 shares, at $54½@$53¼, closed at $53¾. Reading ranged between $26½ and $24¾, and closed at $25. The dealings in this stock amounted to 5100 shares.

Meetings.

The annual and special meetings of the following companies will be held at the times mentioned :

Arroya Seco Gold Mining Company, No. 43 Vesey street. New York City, September 6th, at eleven o'clock A.M.

Gulwa Gold and Silver Mining Company, No. 53 Broadway, Room 18, New York City, September 6th, at half-past three o'clock P.M.

North-Western Mining Company, No. 49 Fifth avenue, Pittsburg, Pa., October 5th, at two o'clock P.M., special meeting to consider the question of selling the real estate of the company in Keweenaw County, Michigan.

Pittsburg & Westmoreland Coke Company, No. 79 Fourth avenue, Pittsburg, Pa., October 14th, at ten o'clock A.M., special meeting for the purpose of voting for or against an increase of the indebtedness of this company.

San Carlos Mining and Smelting Company, No. 207 Vine street, Camden, New Jersey, September 8th, at 12 o'clock M.

Dividends.

Charleston Mining and Manufacturing Company, of South Carolina, has declared a quarterly dividend of two dollars and a half and an extra dividend of one dollar a share, payable August 21st, to stockholders of record ; to others, September 1st, in Philadelphia.

Delaware & Hudson Canal Company has declared a quarterly dividend of one and a quarter per cent on the capital stock, payable September 15th at the National Bank of Commerce in this city.

Granite Mountain Mining Company, of Montana, has declared dividend No. 22 of 25 cents a share, or $100,000, payable September 1st, at St. Louis.

Morning Star Consolidated Mining Company, of Colorado, has declared dividend No. 24 of 25 cents a share, or $25,000, payable on the 19th inst.

ASSESSMENTS.

COMPANY.	No.	When levied.	Delinquent in office.	Day of sale.	Amount.
Bannock, Idaho	2	Aug. 19	Sept. 20	Oct. 5	.25
Chollar, Nev		Aug. 25			.50
Cons. Amador, Cal	13	July 15	Aug. 16	Aug. 31	.15
Cons. Imperial, Nev.	23	Aug. 5	Sept. 8	Sept. 28	.10
Courier, Idaho		Aug. 11	Sept 16	Oct. 5	.12½
Desiré, Dak	1	June 28	*Aug 30	Sept. 18	¼
Enterprise, Dak	12	July 20	Aug. 25	Sept. 15	.01
Eureka Cons., Nev	10	July 28	Sept. 6	Sept. 27	1 00
Far West, Dak	10	Aug. 13	Sept. 17	Oct. 6	.02
Hailey Hill, Utah		Aug. 2	Sept. 9	Sept. 25	.01
Hale & Norc'ss, Nev.	91	July 16	Aug. 18	Sept. 8	.50
Homeward Bo'd, Dak	2	Aug. 6	Oct. 4	Oct. 25	⅛
Indian Spring, Cal	6	July 26	Aug. 30	Sept. 30	.03
Iron Mountain, Dak.	1	May 31	*Sept. 1	*Sep 20	¼
Keokuk, Dak	2	Aug. 12	Sept. 15	Oct. 15	¼
La Plata, Dak	3	July 6	Aug. 9	Aug. 28	.02
Lockport, Dak	1	July 12	*A'g 17	*Sept. 4	¼
Loreto, Mex	9	Aug. 5	Sept. 8	Sept 29	.40
Lower Level, Dak	1	July 13	Aug. 20	Sept. 10	¼
Lucky S., Cal		Aug. 7	Sept. 4	Oct. 2	.14
Monarch, Dak	1	Aug. 3	Sept. 6	Sept. 17	⅛
May Fl'wer G'vel, Cal	31	July 1	Aug. 9	Aug. 31	.25
New Coso, Cal	19	July 13	Aug. 27	Sept. 13	.20
New Discovery, Dak.	1	July 10	Aug. 17	Sept. 2	¼
Occidental, Nev	7	Aug. 9	Sept. 13	Oct. 4	.30
Overman, Nev		July 9			.15
Panalteta, Mex	2	July 14	Aug. 20	Sept. 10	.30
Rainbow, Dak	3	June 1	*Aug 30	*Sep. 16	¼
Ruby, Dak	1	Aug. 10	Sept. 15	Oct. 15	.01
Silver Star, Dak	1	July 8	*Sep 10	Sept. 27	¼
Spruce Gulch, Dak	1	June 22	*Aug 24	Sept. 8	¼
Utah, Nev		Aug. 25			.50

*The delinquent day of the Iron Mountain was postponed to September 1st, and the day of sale to September 20th ; of the Rainbow, to August 30th and September 16th ; of Desiré, to August 30th and September 18th ; of Spruce Gulch, to August 24th and September 8th ; of Lockport, to August 17th and September 4th ; of Silver Star, to September 10th and September 27th.

Pipe Line Certificates.

Messrs. Watson & Gibson report for the week as follows :

No new developments have occurred in oil this week, except the opening of the Marks well at Shousetown, which was surprisingly large. This opens new possibilities in that section, and the result was a scramble to sell, prices breaking to 59¾c. Since then, the market has steadied itself in the vicinity of 61@61¾c., and a good portion of the short interest appears to be eliminated. It will not be surprising to see lower figures, though the price is low, and we can not advise short sales.

Among miscellaneous stocks, Cotton Seed Oil Trust Certificates have been prominent in the dealings, and they have sold up to $49 a share.

COAL STOCKS.

Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted so much per share.

NAME OF COMPANY.	Par value of shares.	Aug. 21. H.	Aug. 21. L.	Aug. 23. H.	Aug. 23. L.	Aug. 24. H.	Aug. 24. L.	Aug. 25. H.	Aug. 25. L.	Aug. 26. H.	Aug. 26. L.	Aug. 27. H.	Aug. 27. L.	Sales.
Barclay Coal														
Cameron Coal	50	17¾		17⅞		17¼		16¼	15⅛	16⅞		16¼		750
Col., C. & I	10	28	27⅛	28¼	27½	28	27¾			27½	27⅝	28⅝	28⅛	2,150
Ches. & O. RR	100	85⅝										85⅛	85⅛	320
Consol. Coal	100													
Cumb. C. & I	100													
Del. & H. C	100	100⅜	99¾	99¾	99¼	100⅞	99⅛	100⅝	99⅛	100¼	99⅛	101	100¼	16,436
D., L. & W. RR	50	129¾	128¾	129	128⅝	129¼	128⅝	128⅞	128	128¾	127⅞	129¼	128¼	123,969
Elk Lick Coal Co														
Lehigh C. & N.†	50	51½		51½				51	50⅞	51	50⅛			717
Lehigh Valley RR.†	50	58				57⅝	57¼	57		57				192
L. & W. C. & I. Co														
Maryland Coal	100													
Montauk Coal	100													
Morris & Essex	50	142								140				110
New Central Coal	100													
N. J. C. RR.	100	54½	54	53⅞	53¼	53¾	53⅜	53¾		53¾	53¼	53⅞	53¾	5,157
N. Y. & S. Coal	50													
Penn. Coal	50													
Penn. RR.†	50	57⅝	57¼	57⅛	56¾	56⅞	56¾	56⅝	56⅜	56¾	56⅛			8,010
Ph. & R. RR.*	50	26½	26¼	26	25⅝	25¾	25½	25½	24¾	25				13,780
Spring Mountain	50													
Westmoreland Coal†	50													

* Of the sales of this stock, 8,680 were in Philadelphia, and 5,100 in New York.
† The quotations for these stocks are not percentage, but actual price.

Total sales, 171,590.

BOSTON MINING STOCK QUOTATIONS.

	Aug. 20. H.	Aug. 20. L.	Aug. 21. H.	Aug. 21. L.	Aug 23. H.	Aug 23. L.	Aug. 24. H.	Aug. 24. L.	Aug. 25. H.	Aug. 25. L.	Aug. 26. H.	Aug. 26. L.	Sales.
Amie													
Allouez			1.62½		1.50				1.62½		1.62½		500
Atlantic													
Arnold	.25		.30		.27½		.30		.30		.30		1,300
Belle Isle													
Blue Ridge													
Bodie													
Bonanza D	.70	.75	.80		.80		.80		.80				1,000
Boston & Montana											5.25	5 00	300
Bowman Silver	.06		.05		.05		.05		.05		.05		2,800
Bijou Cons													
Breece	.17		.19		.14								900
Bulwer													
Calumet & Hecla	212												8
Catalpa	.23		.23		.22½		.22½		.22½		.20		1,500
Cedar Spring													
Central													
Con. Pacific													
Con. Virginia													
Copper Falls													
Crescent	.09		.09						.09				1,300
"Cusi"											17½		200
Dunkin							.31						800
Empire	.06				.06				.05				1,500
Eureka							2.75						100
Franklin							10 75				10⅝		100
Freeland													
Grand Prize													
Huron	1.50				1.50								300
Mascot													
Ontario													
Osceola					13.		13.50				13.		90
Pewabic													
Quincy	48.	47.50			47.50								17
Ridge													
Robinson													
Security	.50								.45				800
South Side													
Standard													
Sutro Tunnel	.05		.04										400
Stormont	.13		.13		.13		.13				.13		2,100
Tamarack													

The following table gives the quotations and sales at the Consolidated Stock and Petroleum Exchange :

	Opening.	Highest.	Lowest.	Closing.	Sales.
Aug. 21	62¼c.	63⅜c.	61¼c.	63⅛c.	5,300,000
23	62	62¼	60¾	61	4,596,000
24	60	61	59¾	61	4,506,000
25	60¾	61⅛	60⅝	61	3,158,000
26	61	61⅞	61	61¼	3,534,000
27	61½	61¾	61⅛	61⅝	2,314,000
Total sales					23,408,000

Boston Copper and Silver Stocks.

[From our Special Correspondent.]

BOSTON, August 26.

This has been an extremely dull week in mining stocks, and sales have been smaller than for many months. The situation of ingot copper is favorable for an advance in the copper stocks ; but the tightness of money makes it difficult to borrow on this class of securities, and consequently business is restricted, and those who are in can not get out, while those who would buy for a turn find no stock offered at low prices. There is no pressure to sell stocks, which would indicate that they are in good hands, and will not be forced upon the market at this time. Calumet & Hecla is steady at $212, at which only 8 shares have been sold, while there is none offered under $215. Quincy sold at $48 (5 shares), while a lot of 2 shares brought $47½. The stock is scarce in the market, and none offered less than $48. Osceola sold at $13, same as last week—50 shares only ; while $12½ is bid, and $13 asked for the stock. There have been no sales of Franklin this week, and no stock offered under $11, while $10¼ is freely bid. Huron sold at $1½ (200 shares), which is a gain of $¼ over the last sale. This stock will undoubtedly sell higher, when the market again becomes active. Tamarack is offered at $90, but bids for it are scarce, and there have been no sales this week. The sales for the week were 265 shares, as compared with 1908 last week.

In silver stocks, Bonanza sold at 75c. Boston & Montana Gold and Silver jumped from $3@$5 on good reports from the mine, with sales of 300 shares at $4 and $5, closing $4⅝ bid.

At the Mining Exchange, there have been sales of Dunkin at 32@31c. Bowman Silver declined to 5 cents on announcement of another assessment of 5 cents a share. "Cusi," dull at 40@50c. Catalpa declined to 20c. Crescent is freely offered at 10c. The market is very dull, and there is no special inducement to operate in this class of stocks.

3 P.M.—At the afternoon Board, Boston & Montana

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par value	Assessments. Total levied to date.	Assessments. Date and amount per share of last.			Dividends. Total paid to date.	Dividends. Date and amount per share of last.		
1	Adams, s. L	Colo.	$1,500,000	150,000	$10	*				$450,000	Aug	1886	10
2	Alice, s. C	Mont	10,000,000	400,000	25	*				725,000	Ju	1886	.06¼
3	Amie Con., s. L	Colo.	5,000,000	500,000	10	*				330,000	Oct.	1883	.05
4	Amy & Silversmith, s.	Mon.		344,419						68,281	Aug	1886	.10
5	Atlantic, c	Mich	1,000,000	40,000	25	$240,000	Apl.	1878	$1.00	320,000	Jan.	1886	$1.00
6	Argenta, s	Nev.	10,000,000	100,000	100	295,000	July	1885	.10	40,000	Feb.	1880	.20
7	Barbee & Walker, s.	Utah	1,000,000	100,000	10	*				60,000	Nov	1880	10
8	Bassick, G. s	Colo.	10,000,000	100,000	100	*				400,000	Mar.	1884	1.00
9	Belle Isle, s	Nev.	10,000,000	100,000	100	140,000	May	1886	.10	300,000	Dec.	1879	25
10	Belcher, G. s	Nev.	10,400,000	104,000	100	2,217,345	ec	1885	30	15,397,000	Apl.	1876	1.00
11	Bellevue Idaho, S. L	Idah.	1,250,000	125,000	10	26,250	Dec.	1884	10	112,500	July	1886	.10
12	Big B'nd Hydraulic, G	Dak.	1,000,000	200,000	5	*				136,000	Aug	1886	.03
13	Black Bear, G	Cal.	3,000,000	3 ,000	100	22,500	Dec.	1884	.25	895,000	May	1883	.20
14	Bodie Con., G. s	Cal.	10,000,000	00,000	100	324,99	Jun.	1886	.50	1,662,572	Apl.	1885	.50
15	Bonanza Developm't C & M		3,000,000	300,000	10					135,000	Oct.	1882	.15
16	Bonanza K'g, Cons. s.	Cal.	1,000,00	100, 00	10	*				185,500	Feb	1885	.10
17	Boston & Mont, G	Mont	2, 0 ,000	200,000	10	*				520,000	Jun	1886	.15
18	Breece, s	Colo.	5,000,000	200,0	25	*				2,000	Feb.	1880	.01
19	Brooklyn Lead, L. s	Utah	500,000	50,000	10					99,500	Aug.	1886	.05
20	Bulwer, G	Cal	1,000,000	100,000	100	40,000	Oct.	1885	20	17,000	Jan.	1884	.10
21	Caledonia, G	Dak	1 , 00,000	100,000	100	505 000	May	1885	.15	40,000	Feb	1886	.10
22	Calumet & Hecla, C	Mich	2,500, 00	100,00	25	1,200,000				27,850,000	Jun.	1886	5.00
23	Carbonate Hill, s. L	Colo.	2,000,000	200,00	10	*				80,000	Apl.	1884	.05
24	Caribou Con., S	Colo.	1,500,000	150,000	10	*				50,000	Mch	1880	.10
25	Castle Creek, G	Idah.	100 0 0	100,000	1					51,000	Oct.	1883	.03
26	Catalpa, s L	Colo.	3,000,000	3 0,000	10	*				270,000	May	1884	.10
27	Central, C	Mich	500,000	20,000	25	100,000	Sept	1861	.06	1,780,000	Jan.	1886	2.00
28	Christy, s	Utah	10,000,000	100,000	100					10,000	Jun.	1885	10
29	Chrysolite, s. L	Colo.	4,000,000	200,000	50	*				1,650,000	Dec.	1884	.25
30	Colorado Central, s. l	Colo.	2,750,000	275,000	10	*				130,000	Aug	1886	.10
31	Cons Cal & Va., G. s.	Nev.	21,600,000	216,000	100	108,000	Jan.	1 85	.20	64,800	Feb	1886	.30
32	Con. Gold Mining, G.	Ga.	500,00	100, 00	5	*				108,000	Nov.	1883	.02
33	Contention, s	Ariz.	12,500,000	250, 0	50					12,587,000	Dec.	1884	.25
34	Crescent, s. L. G	Utah	15,000,000	600,000	25	‡				210,000	Aug.	1886	05
35	Crown Point, G. s	Nev.	10,000,000	100,000	100	2,675,000	Feb.	1882	.25	11,588,000	Jan.	1875	2.00
36	Deadwood-Terra, G	Dak.	5,000,000	200, 00	25	*				1,000,00	Jan.	1883	.10
37	Derbec B. Grav., G. s.	Cal.	10,000,000	10 ,000	100	90,000	Dec.	1881	.10	140,000	Jun.	1886	.10
38	Dunkin, s. L	Colo.	5,000,0 0	200 000	25	*				220,000	Sept	1884	05
39	Elkhorn, G. s	Mont	1,000,00	100,000	10	50,000	July	1883	.50	130,0 0	July	1886	.50
40	Eureka Con., G. s. L	Nev.	5,000,0 0	50,000	100	500,000	July	1886	1.00	4,817,5 0	July	1882	.25
41	Evening Star, s. L	Colo.	500,0 0	50, 00	10	*				1,400,000	Nov	1883	.50
42	Excelsior, G	Cal.	10,000,000	100,0 0	100	563,000	Sept	1885	1 00	875,0 0	Oct.	1880	.25
43	Father de Smet, G	Dak.	10,000, 00	100 00	100	200,000	Nov	1878	1.00	1,125,000	Dec.	1885	.20
44	Franklin, C	Mich	1,000,000	40,00	25	220,00	Jun	1871		52 ,000	Jun.	1886	1.00
45	Freeland, G. s. C	Colo.	5,0 0,000	200, 00	25	*				190,000	July	1886	.10
46	Fresno Enterprise, C	Cal.	5,000,000	100,000	50		Mch	1883	.10	110,000	July	1882	.10
47	Gould & Curry, G. s	Nev.	10,300,000	103,0 0	100	4,001,000	Jun	1886	.50	3,826,0 0	Oct.	1870	10.00
48	Grand Central, s	Ariz.	1,000,000	100,0 0	10					625,000	Dec.	1882	.25
49	Grand Prize, s	Nev.	10,000,000	100,000	100	570, 0	Apl.	1886	.50	495,000	Mar.	1884	.25
50	Granite, s	Colo.	125,000	25,000	1					6,250	May	1883	.01
51	Granite Mountain, s.	Mont	10,000,0 0	400,000	25					1,400 00	Sept	1886	.25
52	Green Mountain, G	Cal.	1,250, 00	125,000	10	*				212,000	Nov.	1841	.07½
53	Hale & Norcross, G. s	Nev.	11,2 0,000	112,000	100	4,930,00	July	1886	.50	1,598,000	Apl.	1871	5.00
54	Hall-Anderson, G	N. S.	150,000	150,000	1					7,000	Jan.	1882	05
55	Hecla Con., s. G. L. C	Mont	1,500,000	30,000	50					1,032,000	July	1886	.50
56	Hel'a Mg & Red, G. s. L	Mont	3,315,000	663,000	5	*				197,97	July	1886	.06
57	Holmes, s	Nev.	10,000, 00	100,000	100	300,000	Sept	1885	10	75,000	Apl.	1886	.25
58	Holyoke, G	Idah.	200, 000	200,000	1					27,000	Feb.	1883	.10
59	Homestake, G	Dak.	12,500,000	125,000	100	900,000	July	1878	1.00	3,518,750	Aug	1886	.40
60	Honorine, s. L	Utah	5 0,000	250,000	2	25,00	Jun.	1883		92,500	Nov.	1885	.05
61	Hope, s	Mont	400,000	8,000	50	*				158,252	Oct.	1884	1.50
62	Horn-Silver, s. L	Utah	10,000,00	400,000	25	*				4,000,000	Nov.	1884	.50
63	Idaho, G	Cal.	310,000	3,100	100					3,750,000	Jun.	1886	7.50
64	Ideal, S L	Colo.	1,500,000	150,000	10					7,500	July	1886	.05
65	Independence, s	Nev.	1 ,000, 00	100,000	100	320,00	Aug.	1885	.20	225,000	Sept	1879	.25
66	Indian Queen, s	Nev.	250,000	125,000	2					368,750	July	1883	03
67	Inyo, G	Cal.	500,000	100,000	5	*				45,000	Apl.	1882	.05
68	Iron Hill, s	Dak.	2,500,000	25 ,00	50	82,500	Oct.	1885		87,500	July	1886	.05
69	Iron-Silver, s. L	Colo	10,000,000	500,000	50	*				1,700,000	July	1886	20
70	Jackson, G. s	Nev.	5,000,000	50,000	100	10,000	Nov.	1880	.20	40,000	Jun.	1886	.10
71	Jocuistitta, s	Mex.	2,500,000	250,000	10					1,20 ,000	Feb.	1865	.50
72	Kentuck	Nev.	3,000, 00	30,000	100	342,000	Nov	1881	.30	1,350,000	July	1884	.10
73	La Plata, s. L	Colo.	2,000,000	200,00	10	*				610,000	Sept	1882	.30
74	Leadville Cons., s. L	Colo	4,000,000	400,000	10	*				390,000	May	1886	.05
75	Lexington, G. s	Mont	4,000,000	40,000	100	*				565,000	Jan.	1885	2.00
76	Little Chief, s. L	Colo	10,000,00	2 0,000	50	*				780,000	Mch	1884	.10
77	Little Pittsburg, s. L	Colo.	20,000,000	200,000	100	*				1,050, 00	Mch.	1880	.50
78	Manhattan, s	Nev.	5,000,000	50,0 0	100	150,000	July	1879	1.00	437,500	Feb	1886	.25
79	Marguerite, G	Cal.	500, 00	25,000	20					18,750	Oct.	1882	.25
80	Marion Bullion, G	N.C	500,000							15,000	Jan.	1886	
81	Martin White, s	Nev.	10,000,000	100,000	100	1,15 ,00	Mar.	1886	25	90,000	July	1879	.30
82	Minnesota, C	Mich	1,000,000	40,0 0	25	420,000	Apl.	1883	1 00	1,82 ,000	Mar.	1876	
83	Mono, G	Colo.	5,000,0 0	5 ,000	100	56 ,00	Jun.	1885	.50	12,5 0	Mar.	1886	.25
84	Montana, Lt., G. s	Mont	3,300,0 0	330,000	10	*				630,300	July	1886	.02
85	Morning Star, s. L	Colo.	1,000,000	100,000	10					600,000	Aug.	1886	.25
86	Moulton, s. G	Mont	2,000,000	400,000	5	*				250,00	Aug	1886	.07½
87	Mount Pleasant, G	Cal.	150,000	150,000	1	*				105,000	Mar.	1884	.10
88	Mt. Diablo, s	Nev	5,000,0 0	50,000	100	137,500	Jun.	1880	2.00	80,000	July	1885	.20
89	Napa, Q	Cal.	700,000	100,000	7					290,000	Jan.	1883	.10
90	Navajo, G. s	Nev.	10,000,000	100,000	100	395,000	Mar.	1886	25	325,000	Feb.	1885	.25
91	N. Hoover Hill, G. s.	N. C.	300,000	120,000	2½	*				30,000	Dec.	1885	.06½
92	New York Hill, G	Cal.	5,000,000	50,000	100	62,500	Oct	1885	.15	215,000	Aug.	1882	.10
93	Northern Belle, s	Nev.	5,0 0,000	500,000	100	425,00	Jan	1884	8.30	2,400,000	Apl	1883	.50
94	North Belle Isle, s	Nev.	10,000,000	100,000	100	150,000	Mar	1886	.20	3 ,000	Aug.	1881	.15
95	Ontario, s. L	Utah	15,000,000	150,000	100					7,625,000	Aug.	1886	.50
96	Ophir, G. s	Nev.	10,00 ,000	100,000	10	3,937,80	Jun.	1886	.25	1,595,000	July	1882	1.00
97	Original, s. C	Mont	1,5 0,000	60,000	25	*				114 0 0	Oct.	1884	.05
98	Osceola, C	Mich	1,250,000	50,000	25	480,000	Apl.	1876	1.60	972,500	Sept	1884	25
99	Oxford, G	N. S.	125,000	125,00	1	*				34,5 0	Oct.	1885	.02
100	Paradise Valley, G. s	Nev.	10,000,000	100,000	100	47,000	Mar.	1882	.15	85,000	July	1886	.25
101	Pleasant Valley, G. s.	Cal.	10,000,00	100,000	100	40,00	Mar.	1884	.10	30,000	Dec.	1882	.05
102	Plutus, G. s. C. L	Colo.	2,000,000	200,000	10	*				2 0,0 0	Feb.	1886	.10
103	Plymouth Con., G	Cal.	5,000,000	100,000	50	*				1,750 000	Sept.	1885	.25
104	Prussian, s. L	Colo	1,500,000	150,000	10					132,000	Jan	1883	.10
105	Quicksilver, pref., Q	Cal.	4,300,000	43,00	100					785,150	Aug.	1886	1.25
106	" com., Q	Cal	5,700,0 0	57,000	100					151,00	July	1882	.47
107	Quincy, C	Mich	1,000,000	40,000	25	200,000	Dec.	1862		4,410,000	July	1886	2.00
108	Richmond, s. L	Nev.	1,350,000	54,000	25	*				4,177,587	May	1886	1.25
109	Ridge, C	Mich.	5 0,000	20,000	25	220,000	Mar	1886	.50	10 ,000	Feb.	1880	.50
110	Rising Sun, s	Dak.	750,000	150,000	5	*				52,000	May	1881	.07½
111	Robinson Con., s. L	Colo.	10,000,000	200,000	50	*				585,000	Mar.	1880	.05
112	Robert E. Lee, s. L	Colo.	10,000,00	500,000	20					100,000	Dec.	1882	.10
113	Rooks, G	Vt.	500,000	50,000	10					61,000	Apr.	1885	.30
114	San Francisco, C	Cal.	5,000,000	50,000	100	45,000	Sept	1883	.50	20,000	Feb.	1884	.05
115	Savage, s	Nev.	11,20 ,00	112,0 0	100	6,156,000	Jun.	1886	.50	4,460,000	July	1869	3.00
116	Security L. Mg, Mfg.	Colo.	1,00 ,000	100,000	10	*				50,000	July	1884	
117	Shoshone, G	Idah.	150,000	150,000	1					7,500	Apl.	1883	.01
118	Sierra Buttes, G	Cal.	225,000	22,500	10					1,430,639	Apl.	1886	.25
119	Sierra Grande, s	N. M.	2,500, 00	500,000	5					880,000	Sept	1884	.25
120	Sierra Nevada, G. s.	Nev.	10,000,000	100,000	100	5,947,693	May	1886	.25	102,000	Jan.	1871	1.00
121	Silver Cord, G. s. L	Colo.	5,000,00	500,000	10					225,000	Nov.	1883	.25
122	Silver King, s	Ariz.	10,000, 0	100,000	100					1,750,000	Aug.	1884	.25
123	Silverton, G. s. L	Colo.	2, 00,000	200,000	10	*				64,000	Aug.	1886	.02
124	Small Hopes Cons., s	Colo.	5,000,000	250,00	20	*				2,225,000	July	1886	.50
125	Smuggler, s. L	Colo.	600,000	6 ,000	10					66,700	Aug.	1883	.25
126	Socorro, C	N. M.	250,000	,000	100					4,000	Mch	1882	.00¾
127	South Yuba, G	Cal.	2,000,000	0 ,00	50	*				150,000	Oct.	1881	.75
128	Spring Valley, G	Cal.	2 0,000	2 ,000	1					50,000	Jan.	1881	.25
129	Standard, G. s	Cal.	10 000,000	1 0,0 0	100	25,000	Oct.	1884	.25	4,425,000	Mar.	1884	.25
130	Stormont, s	Utah	500,0 0	500, 00	1	*				155,000	Nov.	1881	.05
131	St. Joseph, L	Mo.	1,1 0,000	110,000	10	*				562,000	Dec.	1882	.60
132	Syndicate, G	Cal.	10,000,000	100,000	1 0	38,729	July	1882	.15	48,3 0	Sept	1885	.10
133	Tip Top, s	Ariz	10,000,000	100, 0	100	250,000	Sept	1883	.25	100,00	Nov.	1881	.20
134	Tombstone, G. s. L	Ariz	12,500,000	500,00	25	*				1,250,000	Apl.	1882	.10
135	True Fissure, G. s	Utah	1,500,000	150,000	10	*				75,000	Jun.	1883	.15
136	United Verde, C	Ariz.	3,000,000	3 0,000	10	*				97,500	Feb.	1884	.20
137	Valencia, M	N. H.	150,000	1,500	100	*				41,25	Apl	1886	2.50
138	Vizina, s	Ariz.	5,000,000	200,000	25	*				140,000	Apl.	1882	.10
139	Yankee Girl	Colo.	2,500,000	250,000	10					1,012,500	Aug.	1886	10
140	Yellow Jacket, G. s.	Nev.	12,000,00	12 ,000	100	5,448, 00	Dec.	1885	.75	2,184,000	Aug.	1871	1.50

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares. No.	Shares. Par Value.	Assessments. Total levied to date.	Assessments. Date and amount per share of last.		
1	Agassiz Cons., s. L.	Colo.	$2,500,000	50,000	$50	*			
2	Albion, s. L	Nev..	15,000,000	150,000	100	$577,000	July	1883	.50
3	Allouez, c	Mich	2,000,000	80,000	25	240,000	Feb.	1884	.50
4	Alpha Con., G. s.	Nev..	3,000,000	30,000	100	430,000	Mar	1886	.50
5	Alta, s	Nev..	10,080,000	100,800	100	1,951,400	Feb.	1886	25
6	American Flag, s	Colo	1,250,000	125,000	10	300,000	Jun.	1877	.25
7	Aspen Mg. & S ,s. L	Colo	2,000,000	200,000	10				
8	Barcelona, G	Nev..	5,000,000	200,000	25	*			
9	Battle Creek, G	Dak.	5,000,000	200,000	25				
10	Bear Creek	Cal..	300,000	300,000	1				
11	Bechtel Con., G	Cal..	10,000,000	100,000	100	173,500	n.	1883	.10
12	Belvidere	Cal		60,000		92,000	b.	1882	.15
13	Belmont, s	Nev..	5,000,000	50,000	100	7 5,000	Apl.	18 6	.10
14	Best & Belcher, G. s	Nev.	10,080,000	100,800	100	1,698,190	Jun.	1886	.50
15	Big Pittsburg, s. L.	Colo.	20,000,000	200,0 0	100	*			
16	Black Jack, G	Cal..	250,000	100,000	2½	*			
17	Bonanza Chief	Mon	1,000,000	1,000,000	1	*			
18	Bondholder	Colo	5 0,000	200,000	2½				
19	Boston Con., G	Cal..	10,000,000	100,000	100	170,000	Nov	1883	.25
20	Bradshaw, s	Ariz.	2,250,000	22 ,000	10	*			
21	Buckeye Common	Colo.	2,000,000	400,000	5	*			
22	Bull Domingo, s. L.	Colo.	10,000,000	200,000	50	*			
23	Bullion, G. s	Nev	10,000,000	100,000	100	4,570,000	July	1885	.25
24	Bve and Bye	Ariz.	1,000,000	100,000	10	*			
25	Calaveras, G	Cal..	500,000	500,000	1	*			
26	Catskill, s	Nev..	1,500,000	30 ,000	5				
27	Central Arizona, s.	Ariz.	10,000,000	100,000	100				
28	Cen Contin 'l, G.s.L.	C.&A	2,000,000	200,000	10	*			
29	Cherokee, G	Cal..	1,500,000	150,000	10				
30	Chollar, s	Nev..	11,200,0 0	112,000	100	1,040,000	Aug.	1886	.50
31	Climax, s. L	Colo.	2,000,000	200,000	10	*			
32	Colorado No. 2, s L	Colo.	100,000	10,000	10				
33	Con. Imperial, G. s.	Nev..	50,000,000	500,000	100	1,100,000	Aug.	1886	10
34	Con. Pacific, G	Cal..	6,000 000	6 ,000	100	174,000	Feb.	1886	.15
35	Cons Silver, s	Mo..	2,500,000	250,000	10				
36	**Cop. Queen Cons, c.	Ariz	1,400 00	140,000	10				
37	Courtlandt	Colo	500,000	50,000	10				
38	Crescent, s. L	Colo.	3,000,000	300,000	10	*			
39	Crocker, s	Ariz.	10,000,000	100,000	100	65,000	May	1886	.20
40	Crowell, G	N. C	500,000	500,000	1				
41	Dahlonega, G	Ga..	250,0 0	250,000	1	*			
42	Dandy, s	Colo.	5,000,000	500,000	10				
43	Dardanelles, G	Cal..	1,000,000	100,000	10				
44	Decatur, s	Colo.	1,500,000	300,000	5	*			
45	Denver City, s. L	Colo.	5,000 0 0	500,000	10	*			
46	Denver Gold	Colo.	300,000	60,000	5	*			
47	Deseret, G s	Utah	500,000	50,000	10	*			
48	Dunderberg, s	Colo	1,500,000	150,000	10	*			
49	Durango, G	Colo.	500,000	500,000	1	*			
50	Durango T	Mex	120,000	1,200	100				
51	Eastern Dev. Co., Lt	N. S.	1,500,000	150,000	10	990,000	Mar.	1886	1.00
52	Elko Con., s	Nev.					Mar	1884	.15
53	Empire Lt., G	Mon.	500,000	100,000	5				
54	Empire, s	Utah	10,000,000	100,000	100	*			
55	Enterprise., s. L	Colo.	800,000	80,000	10	*			
56	Eureka Tunnel, s. L	Nev.	10,000,000	100,000	100	*			
57	Exchequer	Nev.	10,000,000	100,000	100	840,000	Aug	1885	.20
58	Garfield, Lt., G. s	Nev.	500,000	100,000	5				
59	Gold Placer, G	Colo.	5,000,000	200,000	25	*			
60	Goodshaw, G	Cal..	10,000,000	100,000	100	229,314	Dec.	1885	.25
61	Grand Belt, C	Te .	12,000,000	120,000	100	*			
62	Grand Duke	C lo.	800,000	80,000	10				
63	Gregory-Bobtail, G	Colo.	550,000	550,000	1				
64	Gregory Con., G	Mon.	3,000,000	300,000	10	*			
65	Harlem M. & M. Co, G.	Cal..	1,000,000	200,000	5				
66	Head Cent. & Tr. s. G	Ariz.	10,000,000	100,000	100				
67	Hidalgo, s	Mex.	200,000	20,000	10				
68	Highland, C	Mich	500,000	25,000	25				
69	Hortense, s	Colo.	2,000,000	200,000	10				
70	Iroquois, C	Mich	1,250,000	50,000	25				
71	J. D. Reymert	Ariz	10,000,000	100,000	100	*			
72	Julia Cons., G. s	Nev..	11,000,000	110,000	100	1,438,000	Nov	1885	.10
73	Kearsarge, C	Mich	1,250,000	50,000	25	100,000	Apl.	1886	5.00
74	Lacrosse, G	Colo.	1 0,000	100,000	10				
75	Lee Basin, s L	Colo.	5 0,000	500,000	10	*	Sept	1882	.25
76	Leviathan, s	Nev..	10,000,000	100,000	100	380,000			
77	Lucerne, s	Colo.	5,000,000	500,000	10	*	Jan.	1885	.10
78	Mammoth Bar, G	Cal..	10,000,000	100,000	100	50,000	Dec.	1881	
79	Mariposa pref., G	Cal..	5,000,000	50,000	100	1,687,500	Feb.	1883	.25
80	" common, G	Cal..	10,000,000	100,000	100	1,975,000	Dec.	1881	.20
81	May Belle, G	Cal..	10,000,000	100,000	100	84,000	Mar	1884	.15
82	Mayflower, s	Nev..	1 0,0 0,000	100,000	100	60,000	Feb.	1886	.25
83	Mexican, G. s	Nev	10,000,000	100,800	100	2,565,760	Jun.	1886	.25
84	Mine & Starr, s. L	Colo.	1,000,000	200,000	5	*			
85	Miner Boy, G. s. L	Colo.	5,0 0,000	500,000	10	*			
86	Miller	Nev	5,000,000	200,000	25				
87	Moose Silver, s	Colo.	3,000,000	300,000	10	*			
88	New Pittsburg, s. L	Colo	2,000,000	200,000	10	*			
89	North Standard, G	Cal..	10,000,000	100,000	100	20,000	Nov		
90	Noonday	Cal..	600,000	60,000	10	208,000	Dec.	1881	.10
91	Old Dominion, C	Ariz.	3,000,000	300,000	10				
92	Oriental, Con	Nev.	2,000,000	200,000	10				
93	Oriental & Miller, s.	Nev..	10,000,000	400,000	25				
94	Overman, G. s	Nev..	11,520,000	115,200	100	3,702,320	July	1886	.15
95	Parrott, C	Mon.	1,800,000	180,000	10				
96	Park, S	Utah	2,000,000	200,000	10				
97	Peer, s	Ariz.	10,000,000	100,000	100	125,000	Apl.	1886	.10
98	Peerless, s	Ariz.	10,000,000	100,000	100	275,000	May	1886	.50
99	Potosi	Nev..	10,200,000	112,000	100	1,044,800	Jun.	1886	.30
100	Quin y	Colo.	3,000,000	300,000	10				
101	Rappahannock, G. s.	Va ..	250,000	250,000	1	*			
102	Red Elephant, s	Colo.	500,000	500,000	1	*			
103	Rollins, G. s	Colo.	5,000,000	200,000	25	*			
104	Ropes, G. s	Mich	2,000,000	80,000	25	63,200	Mar	1886	.10
105	S P. & Canon del A C.	N.M.	10,000,000	400,000	25	*			
106	Sheridan	N.M.	2,000,000	200,000	10				
107	Silver Cliff, s	Colo.	5,000,000	400,000	12½				
108	Sonora Con	Mex.	5,000,000	200,000	25	*			
109	South Bodie, G	Cal..					Mar	1882	.15
110	South Bulwer, G	Cal..	10,0 0,000	100,000	100	100,000	May	1881	.25
111	South Hite	Cal..	10,000,000	100,000	100	195,000	Jan.	1883	.05
112	South Pacific	Cal..	500,000	100,000	5				
113	State Line, s	Nev..	250,000	250,000	1				
114	St. Louis & Mex., s.	Mex.	5,000,000	500,000	10	*			
115	St Louis & St Elmo	Colo.	2,000,000	200,000	10				
116	St. L & St. Felipe, G s.	Mex.	1,500,000	150,000	10				
117	St L & Sonora, G.s.	Mex.	1,500,000	150,000	10				
118	St. Louis & Yavapai.	Ariz.	3,000,000	300,000	10				
119	Sunday Lake,	Mich	1,250,000	50,000	25				
120	Sullivan, G. s. L	Me...	500,000	100,000	5	125,000	Dec.	1882	.25
121	Sutro Tunnel	Nev..	20,000,000	2,000,000	10	*			
122	Tamarack, C	Mich.	1,000,000	40,000	25	520,000	Apl.	1885	3.00
123	Taylor-Plumas, G	Cal..	1,000,000	200,000	5	*			
124	Tioga Cons., G	Cal..	10,000,000	100,000	10	*			
125	Todos Santos, s	Mex.	1,000,000	100,000	100	325,000	Oct.	1882	.10
126	Tuscarora, s	Nev.	10,000,000	100,000	1 0	140,000	Oct.	1881	.15
127	Unadilla, s	Colo.	50,000,000	500,000

NEW YORK MINING STOCKS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE.												SALES.
	Aug. 21.		Aug. 23.		Aug. 24.		Aug. 25.		Aug. 26.		Aug. 27.		
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Alice, Mon													
Amie Con., Co													
Argenta													
Bassick, Co													
Belle Isle, Ne													
Bodie Cons., Ca	2.80		2.90	2.85	3.00	2.80	2.90				2 65	2.60	2,075
Breece													
Bulwer, Ca			.98				1.25		1.70	1.40	1.65	1.60	3,100
Caledonia					.60	.55							400
Carbonate Hill													
Chrysolite, Co	.50		.51	.50	.52		.51						600
Colorado Central													
Cons. Cal. & Va., Ne	2.10		2.15	2.10	2.35	2.30	2.50	2.30			3.00	2.75	7,450
Crown Point													
Deadwood							2.55						100
Eureka Cons., Ne													
Father de Smet, Dk													
Freeland													
Gold Stripe, Ca													
Gould & Curry, Ne													
Grand Prize, Ne													
Green Mountain, Ca													
Hale & Norcross, Ne	1.75	1.70	1.75	1.60									700
Helena													
Homestake, Dk	19.50		19.00		19.25		18 50						335
Horn-Silver, Ut			2.30				2 30		2.40	2.30	2.40		1,100
Independence, Ne													
Iron Silver, Co													
Leadville C., Co					.29						.31	.30	500
Little Chief, Co													
Little Pittsburg, Co													
Martin White, Ne													
Moulton							1.95						100
Navajo, Ne	.64		.78	.67	.65								3,000
North Belle Isle, Ne											1.40		600
Ontario, Ut							25.50		25.50				50
Ophir			1.30		1.45		1.55						800
Osceola													
Plymouth													
Quicksilver Pref., Ca									22.75				100
" Com., Ca													
Quincy													
Robinson Cons., Co					.50				.50		.50		300
Savage, Ne													
Sierra Nevada, Ne			.55										400
Silver King, Ar							5.88						100
Spring Valley, Ca													
Standard, Ca									.81				100
Stormont, Ut													
Tip Top, Ar													
Yellow Jacket													

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	HIGHEST AND LOWEST PRICES PER SHARE AT WHICH SALES WERE MADE.												SALES.
	Aug. 21.		Aug. 23.		Aug. 24.		Aug. 25.		Aug. 26.		Aug. 27.		
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Albion													
Alta													
American Flag	.06				.08								900
Barcelona, G													
Bechtel Con., G													
Belvidere													
Belcher													
Best & B'lcher, G. S					1.30								300
Big Pittsburg, S. L													
Bowman Silver													
Bull-Domingo, S.L													
Castle Creek													
Central Ariz'na, S													
Cons. Imperial													
Con. Pacific													
Cusi													
Decatur													
Durango, G													
Eastern Oregon													
Goodshaw, G													
Harlem M. & M. Co													
Harshaw													
Kossuth													
Lacrosse, G													
Mariposa Pref., G													
" Com., G													
Mexican, G. S					.70	.65							400
Mono					2.70								200
New Pittsburg													
North Standard, G													
N. Horn-Silv'r, S L													
Ori'nt'l & Miller, S													
Plutus													
Potosi													
Rappahannock, G													
Red Elephant, S													
Ridge													
Silver Cliff, S													
Sonora Con													
South Bodie, G													
South Bulwer, G													
South Hite													
South Pacific													
State Line, 1 & 4, S													
" Nos. 2 & 3, S													
Sutro Tunnel			.08		.07		.08	.07	.08	.07	.08		12,200
Tamarack													
Tioga													
Unadilla, S													
Union Cons., G. S													
Utah													

Dividend shares sold, 22,210. Non-dividend shares sold 14,100.

sold at $5¼. Closing prices: Calumet & Hecla, $212 bid, $215 asked. Boston and Montana, $4¾ bid, $5¼ asked. Atlantic, $9. Franklin, $10¾ bid, $11 asked. Huron, $1¼. Quincy, $47½. Allouez, $1 bid, $1¾ asked.

San Francisco Mining Stock Quotations.

Daily Range of Prices for the Week.

NAME OF COMPANY.	CLOSING QUOTATIONS.					
	Aug. 20.	Aug. 21.	Aug. 23.	Aug. 24.	Aug. 25.	Aug. 26.
Albion						
Alpha						
Alta	.80	.80	.85	1.00	.95	.90
Argenta						
Bechtel						
Belcher			1.00	1.12½	1.12½	
Belle Isle						
Best & Belcher	1.25	1.25	1.25	1.25	1.25	1.25
Bodie	2.63½	2.75	2.87	3.00	2.75	2.75
Bullion						
Bulwer	.95	1.00	1.12½	1.12½	1.50	1.75
Challar	.85	.90	.85	.80	.75	.70
Con. Pacific						
Con. Cal. & Va.	2.25	2.25	2.37½	2 37½	2.75	2.75
Crown Point	1.00		.95	1.00		.95
Day						
Elko Cons						
Eureka Cons		2.50	2.75			2.50
Exchequer						
Gould & Curry	1.00		1.00	1.00	1.00	.85
Grand Prize						
Hale & Norcross	1.62½	1.62½	1.62½	1.62½	1.50	1.50
Independence						
Martin White						
Mexican	.65		.70	.75	.80	.75
Mono	2.62½	2.75	2.75	2.75	3.00	2.75
Mount Diablo					1.25	
Navajo		.70	.65	.75	.75	.75
Northern Belle						
North Belle Isle						
Ophir	1.25	1.25	1.37½	1.50	1.62½	1.50
Overman						
Potosi	.50	.50	.55	.55	.50	.50
Savage	2.62½	2.62½	2.75	2.75	2.75	2.50
Scorpion						
Sierra Nevada	.55	.55	.60	.60	.60	.60
Silver King						
Tip-Top						
Union Cons	.55	.55	.55	.60	.60	.55
Utah		.80	1.00	.85	.95	.85
Wales Cons						
Yellow Jacket	.90	1.00	.95	1.00	.95	

St. Louis Mining Stocks. August 25.

[From our Special Correspondent.]

The general inactivity of the mining and investment market continues, nor can we look for a revival and renewed demand until, with cooler weather next month, the army of health and pleasure-seekers, at present scattered all over the country, return.

Transactions in mining stocks have been few and far between, although at steady and in some cases advancing prices. Granite Mining Company held its annual election for directors, at Granite, Montana, on the 18th inst. The entire old board was unanimously re-elected. The reports from the mine continue of the most favorable character, and the new 40 stamps are expected to be ready for work during November. The usual monthly dividend of 25 cents a share was declared to-day, payable on September 1st. The Yavapai Mining and Milling Company, of Arizona, has received a letter from its superintendent, saying that he is only awaiting the arrival of the Golden Gate concentrator, at present on the way from Boston, to begin active work, and concludes as follows: "I think every thing will be ready on time, and that we will show our stockholders that this property does not require any puffy letters or newspaper articles to keep up the stock." There has been some little excitement in Sheridan stock, based on a report of a considerable strike in the property. We do not know how true this is; but to judge from the advance in the price of the stock from $2.20 to $3 a share, there must be some foundation for the report. Hope Mining Company has had advice of a shipment of about $5000. There is nothing doing in the stock. The remainder of the mining shares traded in in this market has been held steady at unchanged prices.

The latest quotations as by our special advices:

NAME OF COMPANY.	Location.	Bid.	Asked.
Adams, S. L	Colo	$4.00	$4.50
Cen. Continental, G. S	Ark		1.00
Courtland	Colo		1.00
Dandy, S	Colo		1.00
Granite Mountain, S	Mont	38.00	39.00
Hope, S	Mont	40.00	43.00
Ideal, S. L	Colo	.50	1 00
Laciede			1.10
Puritan			1.00
Quincy	Colo	.50	1.00
St. Louis & Mexico	Mex		3.00
St. Louis & Sonora, G. S	Mex		.25
St. Louis & St. Elmo	Colo		1.00
St. Louis & Yavapai	Ariz	1.05	1.10
Sheridan	N. M	3.00	3.20
Small Hopes Cons., S. L	Colo	8.00	8.75

FREIGHTS.

The latest actual charters to August 27th, per ton of 2240 pounds:

To	From Philadelphia	From Baltimore.	From New York shipping ports.
Alexandria	.60		
Annapolis	.60		
Baltimore	.58§		
Bangor	1.05*	1.15	1.10
Bath, Me	1.05*	1.15	.85*
Beverly	1.05*		.85*
Boston, Mass	1.05*	1.15	.85*
Bridgeport, Conn.		1.15	.55
Brooklyn		1.00	.18§
Cambridge, Mass.	1.05*‡		.88*
Cambridgeport	1.05*‡		.85*
Charleston, S. C.	.70@ 75	.80	
Charlestown	1.05*		.85*
Chelsea	1.05*		.85*
Com. Pt., Mass	1.05*		.85*
E. Boston	1.05*		.85*
East Cambridge	1.05*		.88*
E. Gr'nwich, R. I.			.80
Fall River	.90*	1.00	.75@.80
Galveston		3.00	
Gardner	1.05*¶		
Georgetown, D. C.	.60		
Gloucester	1.05*		
Lynn	1.05@1.10*		1.35
Marblehead	1.05*		
Newark		1.15***	
New Bedford	.90*	1.00	.80
New-Berne	.75		
Newburyport	1.20*	1.25¶	1.00*
New Haven		1.00	.65
New London		1.00	.70
New York		1.00	
Newport			.75@.80
Nortolk, Va	.50		
Norwich			.75@.80
Pawtucket			.75@.80
Portland, Me	1.05*	1.15	.85*
Portsmouth, N.H.	1.15*	1.25	.95*
Portsmouth, Va.	.50		
Providence	.90*	1.00	.75@ 80
Quincyport			1.10
Richmond, Va	.60		
Rockport	1.25*		
Roxbury, Mass	1.05*		
Saco	1.05*¶		
Salem, Mass	1.05		.85*
Savannah	.90	1.00	
Somerset		1.00	.75
Washington	.60		
Williamsb'g, N.Y.		1.00	
Wilmington, N.C.	.80	1.00	

* And discharging. † And discharging and towing. 3c. per bridge extra. § Alongside. ‖ And towing up and down. ¶ And towing. †† Pilotage. ** Below bridge. *** Old B. L.

Unlisted Stocks and Foreign Quotations.

We give below the most reliable quotations obtainable for unlisted stocks and quotations on outside and foreign exchanges :

NAME OF COMPANY.	Location.	Price.	Where quoted.
Bellevue, S. L.....	Idaho.	$5	Unlisted
Bird's Eye Creek, G.	Cal. ..	$3.75@$4.37½	London
Bonanza King, G ...	Cal. ..	$10	Unlisted
California, G...	Colo..	75@87c.	London
Colo. United, S. L...	Colo..	$10@$11.25	London
Eb'rh'dt & Mon't'r,S	Nev..	$3.25@$3.50	London
Elkhorn, G. S.....	Mont.	$10	Unlisted
Empire	Mont.	$20@$22.50	London
Gold Hill, G.....	N. C..	$1.6:@$1.87	London
Honorine, S. L... ..	Utah .	75c.	Unlisted
Iron Hill, S.....	Dak ..	$2@$2.50	Deadwood
Kohinoor & Donaldson, G. S.	Colo..	25@50c.	London
La Noria.....	Mex ..	$3.50@$4	Pittsburg
La Plata, S. L.... ..	Colo..	56@68c.	London
La Trinidad, S.....	Mex ..	$12.50@$15	London
Lexington, G. S.....	Mont.	$10.50	Paris
"Org'niz'rs' shares"	Mont.	40c.	Paris
Montana, Lt., G. S..	Mont.	$45@$46.25	London
New Albion, G.....	N. S..	$1@$1.50	London
New Emma, S.....	Utah .	62@87c.	London
New Hoover Hill,G.S	N. C..	$1@$1.25	London
Oxford, G.....	N. S..	$1.25@$1.87½	London
Placerville, G.....	Cal. ..	$1.25@$1.50	London
Plumas Eureka, G..	Cal ...	$2.18¾@$2.81¼	London
Richmond Con.,S. L	Nev ..	$27.50@$28.75	London
Ruby & Dunderberg, G.....	Nev...	$1.37@$1.62	London
Russell Gold, G. ...	N. C ..	62@87c.	London
Sierra Buttes, G ...	Cal ...	$6.25@$7.50	London
Silver Queen United, S..... ...	Mex ..	$3@$3.50	London
Silverton, S.....	Colo..	$3.50@$3.75	Pittsburg
St. Joseph's, L.....	Mo....	$7@$7.50	Unlisted
United Mexican, S..	Mex ..	$15@$16 25	London
Yankee Girl, S.....	Colo ..	$8@$8.50	Pittsburg

Foreign quotations are per mail advices on basis of £1 = $5 and $1 = 5 fcs.

CONTRACTS OPEN.

61 BRIDGE—PROPOSALS WILL BE received at the Auditor's office, Jefferson County, Indiana, until September 6th, for the excavation and substructure for two bridges, to be erected near Manville, in said county, one to span the East Fork and one to span the West Fork of Indian Kentucky Creek. Bids are invited on stone abutments and wing walls, and also on iron piles and piers.

64 OIL WELL DRILLERS—PROPOSALS will be received by "Editor," care of ENGINEERING AND MINING JOURNAL, New York City, for boring for oil in France. Maximum depth 600 meters, through calcareous and bituminous shales. State price per meter, contractor finding all plant except engines.

68 SUPPLIES—PROPOSALS WILL BE received by J. M. Whitemore, Lieut.-Col., Watervliet Arsenal, West Troy, New York, until August 31st, for furnishing supplies, iron, steel, fuel, etc.

70 WATER-WORKS—PROPOSITIONS will be received by the City of Sumter, S. C., for works to supply the city with water. The town is three quarters of a mile in each direction, measuring from the center, and has 3000 inhabitants.

72 ELECTRIC LIGHT—PROPOSALS WILL be received by William W. McClellan, Chairman of Committee on Electric Light, Mount Vernon, Vt., until September 1st, for electric light for Mount Vernon.

75 WROUGHT-IRON GALLERY—PROPOSals will be received by M. C. Meigs, Supervising Engineer, Washington, D. C., for wrought-iron gallery around great hall of the new Pension Building.

76 SUPPLIES—PROPOSALS WILL BE received by Capt. J. C. Clifford, Frankford Arsenal, Philadelphia, Pa., until September 6th, for furnishing steam-boilers, machinery, metal sheet and wire, iron and steel forgings and castings, fire-brick, etc., etc.

77 WATER-WORKS—PROPOSALS WILL be received by W. J. Overby, Chairman Water Committee, Chatham, Va., until September 1st, for the erection of water-works at Chatham.

78 LEVEE WORK—PROPOSALS WILL BE received by the Board of Mississippi Levee Commissioners, Greenville, Miss., until September 6th, for constructing 572,000 cubic yards of levees.

80 STEAM TENDER—PROPOSALS WILL be received by Capt. F. A. Hinman, U. S. Engineer's Office, Norfolk, Va., until September 14th, for furnishing and building a steam tender, 75 by 14 by 6½, to be delivered in that city.

81 SUBMARINE TELEGRAPH CABLE—Proposals will be received by the Property and Disbursing Officer, office of the Chief Signal Officer, Washington, D. C., until September 6th, for furnishing, delivering, and laying fifteen nautical miles submarine telegraph cable, to connect Cape Charles, Va., with Cape Henry, Va.

82 TORPEDO STATION SUPPLIES—Proposals will be received by Paymaster Frank F. Clark, U. S. N. Torpedo Station, New York, R. I., September 10th, for supplies.

83 ELECTRIC LIGHT—PROPOSALS WILL be received by the Board of Police Commissioners, G. P. Robinson, Clerk, Jersey City, New Jersey, until August 31st, for furnishing electric lights to Jersey City, for the year beginning December 1st.

84 PUMPING-ENGINES—PROPOSALS will be received by Joseph P. Gallagher, Town Clerk, Lake, Ill., until September 2d, for two horizontal compound pumping-engines, with boilers, etc.

85 WATER-WORKS—PROPOSALS WILL be received by T. W. Pitcher, Fire Department, Belfast, Me., until September 4th, for a water supply.

86 SUPPLIES—PROPOSALS WILL BE RECeived by Charles W. Williams, Assistant Quartermaster U. S. Military Academy, West Point, New York, until September 27th, for furnishing to the Military Academy hardware, steam fittings, etc.

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